BioOne COMPLETE

System Analysis of the Historical Change of the River Leader System: Based on the Perspective of Historical Institutionalism

Authors: Shihao, Zheng, Haibo, Qin, Yingming, Li, Liang, Hao, Fengyuan, Guo, et al.

Source: Journal of Resources and Ecology, 11(4) : 414-424

Published By: Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences

URL: https://doi.org/10.5814/j.issn.1674-764x.2020.04.010

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

J. Resour. Ecol. 2020 11(4): 414-424
DOI: 10.5814/j.issn.1674-764x.2020.04.010
www.jorae.cn

System Analysis of the Historical Change of the River Leader System: Based on the Perspective of Historical Institutionalism

ZHENG Shihao[1], QIN Haibo[2], LI Yingming[3,4], HAO Liang[5], GUO Fengyuan[3,6], ZHANG Conglin[3,4,*]

1. State Key Laboratory of Hydraulic Engineering Simulation and Safety, Tianjin University, Tianjin 300072, China;
2. School of Politics and Public Management, Xinjiang University, Urumqi 830046, China;
3. Institutes of Science and Development, Chinese Academy of Sciences, Beijing 100190, China;
4. School of Public Policy and Management, University of Chinese Academy of Sciences, Beijing 100049, China;
5. Policy Research Center for Environment and Economy, Ministry of Ecology and Environment of China, Beijing 100029, China;
6. Ministry of Industry and Information Technology of the People's Republic of China, Beijing 100804, China

Abstract: In the process of implementing the River Leader System, some problems have emerged regarding its progress and effects. From the perspective of historical institutionalism, the historical change process of the River Leader System was revealed in this paper. There were two key nodes in the historical change progress of the River Leader System. In 2014, the river leader system promotion was transferred from the local government to the Ministry of Water Resources. In 2016, the River Leader System was recognized by the central government and implemented nationwide. The historical change process of the River Leader System can be divided into three periods: the creation and formation period, the pilot and diffusion period, and the promotion and strengthening period. The change in the river and lake problems was an important driving force for the historical change of the River Leader System. A path dependent phenomenon was mainly reflected in the policy diffusion scope, problem orientation, main tasks and management methods. At present, there are some shortcomings in the River Leader System, such as a lack of inter-provincial coordination, imperfect evaluation mechanism, poorly coordinated management tasks, and insufficient public participation. To solve these problems, some policy recommendations are put forward. In the short term, the River Leader System will be continuously improved and strengthened. In the long term, it will be transformed into the integrated watershed management system.

Key words: River Leader System; historical institutionalism; historical change; development trend

1 Introduction

Implementing the River Leader System (RLS) is an effective measure to solve China's complex water problems and maintain the ecosystem of rivers and lakes. The core of the RLS is the system of responsibility of the CPC and the government leaders—especially the main leaders(Chen, 2017). The main leaders of the CPC and governments at all levels are the river leaders for the rivers and lakes in their jurisdictions. According to the laws and regulations on rivers and lakes, the management targets are set step by step and the management tasks are assigned to governments at different levels. In addition, related subjects of the RLS will be rewarded or punished based on their performance(Xiong, 2017). As it relates to the people's sense of gain, the RLS becomes a focus of the society. After being proposed in a specific historical background, the RLS has constantly changed. What is the main historical change process of the RLS? What problems does the RLS now face? How should

Received: 2020-01-07 **Accepted:** 2020-03-17
Foundation: The National Natural Science Foundation of China (71503245); The Youth Fund Project of Dean of Chinese Academy of Science and Technology Strategic Consulting Institute (Y7X1101Q01).
First author: ZHENG Shihao, E-mail: zhengshihao@tju.edu.cn
***Corresponding author:** ZHANG Conglin, E-mail: zhangconglin@casisd.cn

Citation: ZHENG Shihao, QIN Haibo, LI Yingming, et al. 2020. System Analysis of the Historical Change of the River Leader System: Based on the Perspective of Historical Institutionalism. *Journal of Resources and Ecology*, 11(4): 414–424.

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

the RLS be adjusted? What is the trend of the RLS, and why? The answers for these questions are not only related to understanding the RLS, but also will have a great impact on the management and protection of rivers and lakes in China.

2 Literature review

At present, the existing studies on institutional analysis of the historical changes of the RLS are organized from three aspects. Firstly, the development periods of the RLS are divided from different perspectives. Jiang (2016) summarized the development and effectiveness of the RLS over the past ten years. Liu et al. (2016) summarized the historical change process of the RLS from the perspectives of its beginning, implementation and effectiveness. Based on the practices of provincial governments, Zhou (2017) divided the RLS into three periods: absorption and promotion by the provincial governments, the autonomous diffusion among prefecture-level cities, and compulsory promotion by provincial governments. According to the importance of the RLS, Liu (2017) divided the RLS into two periods: the pilot exploration period of the local governments and the top-level design period of the central government. Based on the theory of institutional diffusion, Wang et al. (2018) divided the development process of the RLS into a policy establishment and promotion period, a policy diffusion period, and an accelerated policy diffusion period. From the perspective of institutional economics, Shen (2018) divided the development of the RLS into three periods: an individual initiative period, a local diffusion period, and a comprehensive advancement period. According to the promulgated policies, Li (2019) divided the RLS into three periods of a creation period, a local diffusion period and an implementation period.

Secondly, the problems of the RLS have been analyzed and corresponding suggestions were put forward by several authors. Ren (2015) analyzed the dilemma of the RLS in terms of effectiveness, organizational logic and responsibility. Liu et al. (2016) pointed out that related laws and regulations of the RLS should be improved in the future to advance the modernization of China's governance system and capacity. Liu (2016) pointed out that the RLS depended on the government. Therefore, it was necessary to create new water-related administrative systems, improve water-related administrative capabilities, improve the legal system, and establish an upstream and downstream dialogue mechanism. Liu et al. (2016) believed that the difficult aspects of the RLS were the non-integrated planning of the watershed and insufficient capital input. In order to solve these problems, they suggested we should attach importance to systematic decision-making, implement different policies for different rivers, and improve the system and mechanism. Li (2017) held that the RLS suffered from imperfect top-level design and inadequate coordination in the process of implementation. Therefore, it was necessary to provide multi-channel guarantee methods in terms of the theoretical system, responsibility implementation mechanism, supervision and law enforcement, and participation of multiple governments. Based on the operation of the RLS, Li and Hu (2017) pointed out the predicaments of the RLS in terms of vertical subcontracting governance, horizontal function integration, and the degree of public-private cooperation; and he put forward suggestions for deepening reforms and expanding public-private cooperation. Li (2019) believed that the RLS had deficiencies in the institutional logic and laws, making it necessary to improve the legal system and enhance multi-participation. Zhan (2019) summarized the hidden troubles of the RLS in the assessment system, and advised improving the RLS from the aspects of the internal mechanism and constructing related systems. In order to solve the problems of ambiguous legal status and the lack of regional cooperative governance, Cai et al. (2019) put forward suggestions related to law-making, watershed management and regional collaborative water governance. Wang et al. (2019) believed that the RLS still had problems in the legal system, responsibility division, and cooperation between different departments, and suggested that China should improve the RLS in terms of laws, rules, management, and public participation.

The third aspect is the development trend of the RLS. Most scholars believed that the RLS would develop in harmony with other systems, and that it would continue to be improved and strengthened. For example, Huang (2015) believed that the power characteristic of the RLS would be decreased in the future, and the legal and moral system would be strengthened. Fu et al. (2019a; 2019b) discussed the development trend of the RLS from five aspects: legal system construction, information countermeasure, market incentive, environmental policies, and technical support. Meanwhile, they also analyzed the future trend of the RLS from the aspects of improving the legal system construction, removing the information barrier, expanding the scale benefit and improving the public supply. Based on the perspective of coordinated governance, Yan et al. (2019) investigated the development trend of the RLS, and believed that the RLS was becoming more legalized. However, some scholars believed that the RLS is a product of a specific historical stage, and that it may be terminated eventually (Shen, 2018).

In fact, the RLS is a Chinese phrase which does not exist internationally. In terms of river and lake management coordination systems and mechanisms, similar international experiences are mainly integrated watershed management (Xu et al., 2016). Globally, different countries and international rivers have various watershed management models according to their actual conditions. The main models of integrated watershed management include the watershed authority (such as the Tennessee Watershed Authority in the United States), the watershed coordination committee (such as the Murray-Darling Watershed Coordination Committee in Australia), and the comprehensive watershed institution

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

(such as the Rhine Management Council in Europe) (Yang et al., 2004). The watershed authority is a centralized management model. It absorbs all organizations and institutions related to water resource management in the watershed, and operates under national laws and regulations. Taking over the functions and responsibilities of relevant government departments functioning in the watershed, this model is beneficial to water resource development (Millington, 2016). The watershed coordination committee model consists of representatives of relevant government officials and other stakeholders in the watershed. It focuses on cross-regional coordination and cooperation, and uses economic leverage to allocate resources (Department of the Environment and Energy, 2016). The comprehensive watershed institution model is applicable to water environment governance and water ecological restoration in transnational watersheds. By setting common goals, making water framework directives, and implementing dynamic supervision, it ensures the sustainable development of the watershed (US Environmental Protection Agency, 2016).

On the whole, although existing research has obtained many results, it needs to be further improved, which is mainly reflected in three aspects. Firstly, the fundamental reasons for the necessary changes in the RLS need to be further studied. Secondly, a more standardized logical analysis framework is needed to analyze the problems and countermeasures of the RLS. Thirdly, the factors driving the development trend of the RLS still need to be explained, and the development trend should be extrapolated in the short term and long term.

In summary, based on the existing research, we intend to interpret the historical change process of the RLS, describe the problems of the RLS, and propose countermeasures. On this basis, the possible future development trends of the RLS are analyzed. This analysis is helpful for providing a new thinking mode and point of reference for the adjustment of the RLS and the management system of the rivers and lakes in China.

This article has two innovation points: 1) In this article, we intend to interpret the historical change process of the RLS based on Historical Institutionalism, and to reveal the path dependent phenomenon of the RLS and the historical veto points from this perspective. 2) In this article, we also analyze the development trend of the RLS and its causes from the short- and long-term perspectives, and make relevant suggestions.

3 Research method

Since the 1980s, New Institutional Politics has developed rapidly in the study of western politics. New Institutional Politics has increasingly become a most advanced and interpretive analytical paradigm, and Historical Institutionalism is an important branch of it (Hall, 1996). It overcomes the disadvantages of Organizational Institutionalism and Rational Choice Institutionalism, and builds an analysis framework that includes macrostructure, middle system and micro objects. In contrast, Historical Institutionalism attempts to explain socio-political phenomena from the perspective of historical evolution and institutional effects. It attaches great importance to the special significance of historical events in driving the changes of systems, and the combinations of system factors and other factors. Therefore, it is extremely persuasive. The analysis based on Historical Institutionalism contains three core points: the path dependence in the process of system historical change, the "Historical Veto Point[1]" in the process of system historical change, and the multiple motivations of system changes. Through the analysis paradigm of Historical Institutionalism, the historical change process of the RLS is analyzed here, and the path dependent phenomenon is revealed. The key nodes[2] in the historical change process are analyzed. On this basis, we point out the "Historical Veto Points" and put forward some countermeasures. Finally, the short-term and long-term development trends of the RLS are analyzed from the perspective of the system subject and the system environment (Fig. 1).

4 The historical change and path dependence of the RLS

From the perspective of Historical Institutionalism, the duration period and imbalance period constitute a cyclical process of the system of historical change. The emergence of "key nodes" is the cause of breaking the system balance. After the system was established, the path dependence appeared due to the four factors of "higher fixed costs"[3], "learning effects", "coordination effects" and "adaptive expectations" [4] (North, 1990). Path dependence constantly improves a system and continues to increase the effect of the system, thus the system develops stably. After a period of stable development, the original balance of the system is broken because of the emergence of the key nodes, which forces it to change. The historical change of the RLS also conformed to this law. With the development of the economy and the society, the water pollution problems, relevant management departments, and the main tasks and management methods of the rivers and lakes in China constantly changed. With the emergence of key nodes, the system

[1] Negative factors of the system dramatically increase the failure possibility of that system in the process of implementation.
[2] In a relatively short period, the diffusion scope, problem orientation, main tasks, and management methods drastically increased the possibility of system change.
[3] Various costs invested in the formulation and implementation of the system hinder the termination of the system, making the system tend to remain on the original path.
[4] Because of the benefits from the implementation of the system, the subject of the system expects that the system will exist for a long time and will continue to adapt to the new environment.

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

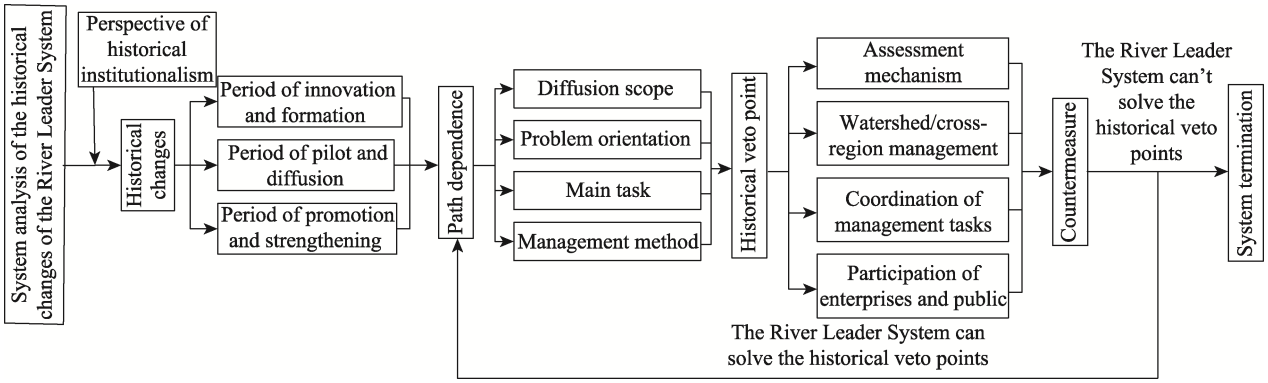


Fig. 1 The analysis framework of the RLS based on the Historical Institutionalism

began to change. In this process, the problems of water pollution in China were important driving forces for the historical change of the RLS. Taking the changes in four key factors (the diffusion scope, problem orientation, main task, and management method) that triggered key nodes as partitioning standards, the historical change of the RLS could be divided into three periods (Table 1).

4.1 Creation and formation period

In 2007, the water pollution caused by cyanobacteria in Tai Lake led to a lack of drinking water in the nearby city of Wuxi. This event rapidly became the focus throughout China and the world.

The monitoring results of river water quality began to be included in the assessments of the main party and government officials in 2007. In that year, the *Decision of the Party Committee and Government of Wuxi Municipal on Establishing the RLS and Strengthening River Management* clearly required implementation of the RLS in Wuxi. In 2008, the General Office of Jiangsu Provincial Government issued the *Notice on the Implementation of the Dual RLS in the Main Tributaries of Tai Lake*. These two executive orders made the provincial and municipal administrative leaders serve as the river leaders of the 15 major tributaries of Tai Lake. The main responsibilities of the river leaders were prevention and control of water pollution. The proposal of the RLS in this period effectively solved the problems of coordination at different levels, in different areas and between different departments. It was not only a response for solving complicated local water problems, but also a mechanism to overcome the system of obstacles to water management.

The emergence of the RLS was not achieved overnight, but it was created according to China's river and lake management and the local political environment. The emergence of the RLS reflected the "learning effect" and the "coordination effect". Before the emergence of RLS, China had implemented an administrative leadership responsibility system in some aspects of water management such as flood control (National People's Congress Standing Committee, 1997), drought resistance (General Office of the Ministry of Water Resources, 1997), reservoir dam safety (State Council, 1991), and drinking water safety (General Office of the State Council, 2005). The administrative leaders were responsible for coordinating various water management departments. This management method achieved good results. In addition, based on the most essential feature of socialism with Chinese characteristics, the leadership of the Communist Party of China, the Party's centralized and unified leadership, should be upheld and strengthened in the management of rivers and lakes. The RLS not only learned from and inherited the water management experience of China, but also reflected the inevitable requirements for the coordination of river and lake management and protection work.

4.2 Pilot and diffusion period

As the successful experiences of water management in Wuxi were learned by those in other areas, the RLS was gradually promoted in other cities of Jiangsu Province and most cities in the country. In 2014, the Ministry of Water Resources issued the *Guiding Opinion on Strengthening Rivers and Lakes Management*, encouraging local governments to implement the RLS. In the same year, the pilot work for the river and lake management system was carried out (Ministry of Water Resources, 2014a; Ministry of Water Resources, 2014b). By the end of 2016, 25 provinces had carried out the exploration of RLS. Among them, Beijing, Tianjin, Jiangsu, Zhejiang, Fujian, Jiangxi, Anhui, and Hainan provinces had issued related regulation orders to implement the RLS in their jurisdictions, and other provinces carried out pilots at the municipal, county, and watershed levels (Jiang, 2016).

In 2014, the RLS was developed from independent exploration and exchange of experiences between local governments to unified promotion and pilot testing by the Ministry of Water Resources. This was the first key node in the historical change of the RLS. In this period, the diffusion scope, problem orientation, main tasks, and management methods of the RLS jointly promoted the historical change of the RLS, and the path dependence phenomenon could be seen during this period. Firstly, driven by the Ministry of Water Resources and other departments, the RLS had dif-

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

fused from Jiangsu Province to the other 25 provinces. Secondly, the key tasks of the RLS had gradually increased from prevention and control of water pollution to include flood control, water ecological restoration, and water supply security. Thirdly, the main tasks of the RLS were gradually increased. Fourthly, the management method developed from administrative management into various management methods such as legislation, administration and market supervision.

During this period, the RLS was initiated and explored at different levels, from local governments to the central government, and it developed into being promoted from the central government to local governments. Under the promotion of the Ministry of Water Resources, the RLS would be developed more rapidly. In addition, the "adaptive expectations" greatly increased the possibility of further change of the RLS. These had allowed the foundation of the RLS to rise to the national level.

4.3 Promotion and strengthening period

In December 2016, the General Office of the CPC Central Committee and the General Office of the State Council issued the regulation orders "*Opinions on the Implementation of the RLS*". And these orders stated that the main tasks of the RLS included prevention and control of water pollution, water ecosystem treatment, protection of water resources, river and lake shoreline management and water law enforcement and supervision. The party and government leadership responsibility system was taken as the core of the responsibility system of the RLS. Since then, the RLS had officially risen to the national level. In 2017, according to the revised *Law of Water Pollution Prevention and Control* all provinces, cities, counties, and townships were required to establish the RLS. The work on the protection of water resources, shoreline management, the prevention and control of water pollution, and water environment treatment of rivers and lakes was hierarchically and sectionally organized. In January 2018, the General Office of the CPC Central Committee and the General Office of the State Council issued the *Opinions on the Implementation of the Lake Leader System in Lakes*, which incorporated the water space management of lakes into the tasks of the RLS. Since then, with the efforts of various departments such as the Ministry of Water Resources and the Ministry of Ecology and the Environment, as well as local governments, establishing the RLS has been continuously advanced. This is mainly reflected from five aspects: the organizational system, supporting systems, localization and modification, information platforms, and research institutions (Zhang et al., 2019).

Rising to the national level became the second key node of the RLS that facilitated its historical change. During this period, the RLS was further strengthened and improved, and the path dependence phenomenon was still significant and mainly reflected from four aspects. Firstly, the CPC Central Committee and the State Council decided to implement the RLS nationwide, and the RLS was diffused to 31 provinces. Secondly, various water problems were solved by the RLS. Thirdly, the range of main tasks of the RLS was made more extensive. Fourthly, the management methods were more diversified and people were encouraged to participate in the management of rivers and lakes.

Overall, the historical change process of the RLS was initiated from local governments, and then gradually recognized by the central government and promoted from the central government back to local governments. This involved a dynamic process of interactions between the central government and local governments. Since 2007, with the emergence of these two key nodes, the historical change process of the RLS has gone through three periods: the creation and formation period, the pilot and diffusion period, and the promotion and strengthening period. In terms of the diffusion scope, problem orientation, main tasks, and management methods, the RLS has been continuously improved, and the path dependence phenomenon was relatively obvious.

Table 1 Changes of the RLS in different periods

Period	Diffusion scope	Water problem	Main task	Management methods
Creation and formation	Wuxi City, Jiangsu Province	Water environment problem	Organizing and leading the implementation of water environment comprehensive treatment plan, coordinating and resolving contradictions and problems in work, and implementing plans, projects, funds, and responsibilities	Administrative method, including: planning, supervision, management, etc.
Pilot and diffusion	25 provinces	Water resources, water environment, water ecology and water disaster problems	Improving the system of laws and regulations, establishing the restraint mechanism of planning, innovating the management mechanism of rivers and lakes, registering rights of shorelines, establishing the compensation system for occupied shoreline, regulating the approval of river-related construction projects and activities, prohibiting river-related illegal activities, strengthening daily inspections, cracking down on illegal behaviors, and strengthening dynamic monitoring of rivers and lakes management	Legislative, executive and market methods
Promotion and strengthening	31 provinces	Water resources, water environment, water ecology and water disaster problems	Strengthening the water resources protection, strengthening the shoreline management and protection of rivers and lakes, implementing space management of rivers and lakes, strengthening water pollution prevention and control, improving water environment treatment, strengthening water ecological restoration, strengthening law enforcement supervision	Legislative, executive, market and public participation methods

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

5 "Historical Veto Points" of the RLS

Although the RLS has played an important role in the protection of rivers and lakes in China, it also has some problems, such as slow progress and unexpected results (Zhang et al., 2018). Compared with the targets of fundamentally improving ecology and environment of rivers and lakes, for the targets of eradicating illegal activities including river occupation, lake reclamation, illegal sand mining, and excessive emissions, there is still a long way to go (E J P, 2018). Some problems have been exposed in watershed/cross-regional management and protection, coordination of tasks, management methods, and assessment mechanisms. During the period of historical change of the RLS, the accumulation of "Historical Veto Points" may lead to the failure of the RLS. Therefore, in order to improve the RLS, we should identify the "Historical Veto Points" accumulated during the period of historical change of the RLS, and put forward reasonable suggestions to solve the existing problems.

5.1 The imperfect assessment mechanism

During the promotion and strengthening period, the RLS was established in China. Up until June 2018, there were more than 300000 river leaders at the provincial, city, county, and township levels. The provinces, cities, and counties of 31 provinces had established River Leader System Offices. According to the responsibility division, the relevant departments at all levels completed various tasks in a coordinated manner. Therefore, it is necessary to improve the assessment mechanism on the basis of clarifying the responsibilities of all subjects. However, the current RLS has problems which may complicate this, such as an inadequate responsibility system and insufficient evaluation authority. Firstly, River Leader System Offices in 30 provinces are in the water administrative departments, so the authority and deterrence of supervision, inspection and notification need to be improved. Since some departments believe that the RLS is the work of water administrative departments, the joint efforts of relevant departments need to be further strengthened. Secondly, a complete and clear responsibility system is needed in the RLS. Lack of a clear division the of responsibilities of river leaders, river leader offices and related departments leads to difficulties in accountability. Thirdly, the assessment subject of the RLS is relatively singular. At present, there is a top-down assessment of the system, but third-party participation and an independent scientific evaluation system are still needed. The neutrality and transparency of the assessment system need to be strengthened, otherwise this system is not conducive to increasing the participation and satisfaction of the public (Zhang et al., 2019).

5.2 Unclear realization mode of watershed/ cross-regional RLS

From the perspective of problem orientation, the watershed and cross-regional characteristics of problems of China's rivers and lakes will become more obvious in the next period. While it is necessary to take certain measures, such as watershed and cross-regional management to protect rivers and lakes, the RLS cannot yet fully meet this requirement.

Firstly, from the perspective of inter-provincial regions, the RLS is implemented in various provinces. The realization mode of watershed/cross-regional RLS is not complete, including work targets, basic tasks, the organization system, and the operation mechanism. Therefore, it is difficult to effectively coordinate the management and protection work of cross-provincial rivers and lakes. Secondly, from the perspective of the seven major watersheds, the connections between the RLS and the current watershed administrative management system needs to be further strengthened. Although we have established the watershed RLSs in some watersheds (such as the Tai Lake Watershed), these RLSs are mainly limited within the water administration system. Thus, the cooperation mechanism between the RLS and China's current watershed/cross- regional management institutions, especially the Watershed Supervision Bureau of the Ministry of Ecology and Environment, and the Regional Inspection Bureau of the Ministry of Ecology and Environment, needs to be established and improved.

5.3 Unplanned management and protection tasks

In the process of the historical change of the RLS, the types and numbers of management and protection tasks have been constantly increasing. Related tasks need to be coordinated and systematically planned. However, the RLS sometimes cannot meet this requirement in practice. Firstly, when river leaders at all levels complete management and protection tasks, the order of the tasks is usually determined by the difficulty of the tasks. Because of this, it is possible to ignore the organic connections between different tasks. At the end of the annual reform cycle, the implementation of basic tasks such as delineating the shorelines of rivers and lakes, compiling management strategies of rivers and lakes, and optimizing monitoring networks tends to lag behind, affecting the overall management and effectiveness of protection of the rivers and lakes. Secondly, under the background of RLS implementation, governments at all levels have shown unprecedented efforts in water management, but there are also activities in violation of objective laws. There is even a tendency to manage the water at any cost, turning professional governance into political goals. Pursuing work rapidly without paying attention to quality often ends up with less success. Third, the lack of a funding mechanism has become an important bottleneck for RLS implementation in various regions. Due to the lack of funds in some areas,

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

projects such as compiling management strategies of the rivers and lakes cannot be implemented as scheduled.

5.4 Insufficient participation scope and depth of enterprises and the public

The participation of enterprises and the public plays an important role in improving the governments' ecology and environment decision-making, decreasing the overall cost of ecological and environmental protection, and improving of ecological and environmental quality. At present, the decisions related to the RLS are made by governments. Although it plays an important role in protecting rivers and lakes, this management model has problems such as higher management costs and insufficient protection effectiveness. The current participation of enterprises and the public in the RLS is seriously inadequate. Enterprises and the public mainly take part in the end links, especially in the end treatment of water pollution, and public decision-making, planning, policy making, river leader meetings, assessment and accountability are all insufficient. Regarding the ecological and environmental problems put forward by the public, officials of some regions do not verify, expose, and rectify in a timely manner. This phenomenon has damaged the enthusiasm of enterprises and the public. There is no clear procedure or system to encourage enterprises and the public to take part in water protection, and their participation in water protection depends on the willingness of the River Leader System office.

6 Discussion

The RLS has changed in the past, and it may change further in the future. As it is affected by the subject and environment of the system, the short-term and long-term development trends of the RLS will be different.

6.1 Short-term development trends

In the short term, the RLS will continue to generate path dependent phenomenon during the implementation process. The increasing effect and self-reinforcing trend of the RLS will become more and more obvious for several reasons.

From the perspective of the system subject, the first point is the "learning effect" on the system makers. The water administrative department will improve several aspects of the RLS: 1) refining relevant regulations and systems, and standardizing and refining the RLS; 2) refining regulations about the RLS in *the Water Pollution Prevention and Control Law*, and incorporating the RLS into water-related laws such as the *Water Law* and local water regulations; 3) focusing on the problems exposed during the implementation of the RLS, and 4) improving the system arrangements of the RLS. The second point is the "collaborative effect" of the system implementers. Since the RLS has been implemented for a time, related parties can only maximize their own interests through cooperation in the framework of the RLS. Thirdly, related parties have formed "adaptive expectations". Since the implementation of the RLS, though the system costs a lot, it has changed many rivers, turning them into managed rivers. The improvement of the water environment and water ecological qualities have enhanced a sense of gain among the public.

As the RLS has been enshrined into law, department regulations and local regulations, it has gradually become more well-known to the public. Due to the "high fixed cost" paid for the promotion and establishment of the RLS, the possibility of the RLS being terminated in the short term is greatly reduced. However, the possibility of path dependence of the RLS is greatly increased.

6.2 Long-term development trends

In the long term, implementing the integrated watershed management[5] system is an international consensus. The transition from the RLS to integrated watershed management meets the requirements of the future management of rivers and lakes for several reasons.

In terms of the system subject, firstly, from the perspective of CPC and government leaders, the work of the RLS costs river leaders a lot of time and energy. But since the officials of the CPC and governments who serve as river leaders have many other responsibilities and daily tasks, it is difficult to invest a lot of time and energy in RLS. Secondly, from the perspective of market subjects, due to the insufficient participation of enterprises, there is a lack of sufficient and continuous funding for the management and protection of rivers and lakes. This undermines the long-term management and protection of rivers and lakes. Thirdly, from the perspective of the public, if the public does not get the chance to participate in the RLS, they fail to realize their responsibility of river and lake protection, and their enthusiasm for the protection of rivers and lakes will disappear. Eventually, the management and protection efforts for rivers and lakes will be affected.

From the perspective of the system environment, firstly, with the changing problems of rivers and lakes, the management of rivers and lakes must be constantly adjusted over time. To solve the problems of rivers and lakes, all the factors of a watershed, such as the natural, social, economic, and cultural factors, should be considered. The relationship between protection and economic growth should be thoroughly coordinated, otherwise half the results will be obtained with twice the effort. Secondly, we need to

[5] At the watershed level, through coordinated management cross departments and cross administrative regions, comprehensive developing, utilizing, and protecting water, soil, and biological resources in the watershed, maximized adapting to natural laws, making full use of ecosystem functions to realize the economic, social, and environmental welfare maximization and the watershed sustainable development.

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

uphold and implement the concept of ecological civilization for a long time if we want to resolve the problems of the resources and environment, and change the development mode. In the background of the ecological civilization system reform, resource development and environmental protection should be considered in the units of the watersheds.

7 Conclusions

From the perspective of Historical Institutionalism, the historical change of the RLS is described in this study. This analysis reveals two key nodes in the historical change process of the RLS, and divides the progress into three periods: the period of creation and formation, the period of pilot and diffusion, and the period of promotion and strengthening. The path dependent phenomenon was explained from the aspects of diffusion scope, problem orientation, main tasks and management methods. In the historical change process of the RLS, the "Historical Veto Points" accumulated constantly. They were mainly reflected in the unclear mode of watershed/cross-regional RLS, uncoordinated management tasks, and insufficient participation of enterprises and the public.

The management and protection of rivers and lakes is a systematic, dynamic and complex project that will take a long time. In the future, China should balance short-term and long-term goals. In the next period, the key points to solve for the "Historical Veto Points" of the RLS are as follows: making the maintenance of river and lake health the main tasks; implementing watershed management and protection; strengthening assessment and accountability; carrying out coordinated tasks; implementing collaborative governance; and upgrading the RLS. Only in these ways, can the modernization of China's water management system and capacity be promoted.

7.1 Short-term suggestions

7.1.1 Exploring the realization of watershed/cross-regional RLS, and making RLS a useful supplement to China's current watershed management system

At the watershed level, communication and consultation mechanisms should be built between the watershed management agency of the Ministry of Water Resources, the Watershed Supervision Bureau of the Ministry of Ecology and Environment, the Regional Inspection Bureau of the Ministry of Ecology and Environment and the river leader offices of provincial administrative regions. The cooperation should be strengthened from the perspectives such as making laws and regulations, planning compilation, standard formulation, information sharing, joint prevention and control, monitoring and evaluation, and work supervision. Based on the above tasks, the RLS and the watershed management system of China will be well integrated, and a new pattern of watershed management with central, watershed and provincial level interactions, mutual coordination and good connectivity will be formed.

7.1.2 Coordinating management and protection tasks, and establishing and improving funding mechanisms

Firstly, at the national level, fixed fiscal subjects should be established for watersheds, and they should be managed and protected by the central government. We should plan a series of river and lake management and protection projects, and specific financial support should be given. Secondly, at the regional level, we need to comprehensively consider the connections between various management and protection tasks, and their difficulties. The five-year implementation goals and task lists should be made scientifically. These goals and tasks should be aligned with the five-year plans in the resources and environment field. On this basis, the annual reform goals and action plans are determined, and responsible persons are appointed. Throughout this process, we should fully respect the laws of nature and financial affordability, do what we can do, and do our best to ensure that the relevant work is carried out in an orderly manner and to achieve tangible results as scheduled. Thirdly, at the level of rivers and lakes, the status of each river and lake should be investigated from six aspects: water resource protection, shoreline management, prevention and control of water pollution, water environment treatment, water ecological restoration, and law enforcement supervision. Based on the existing planning of the rivers and lakes and economic and social conditions, specific and operable management objectives, key tasks and safeguard measures will be formulated. To improve the organizational, system, funding, team, and mechanism guarantees of the management strategies of the rivers and lakes, dynamic adjustments should be made in accordance with the development trends of the rivers and lakes. Fourthly, in terms of the fund allocation mechanism, the top-down and bottom-up approaches should be combined to allocate funds properly. The coordination function should be played by the river leader system offices, and the subjective initiatives of relevant regions and departments should be respected. The connection between fund allocation and task lists should be strengthened, and private capital investment should be encouraged through public-private partnerships. The governance structure of funds should be improved to ensure that the funds are used reasonably.

7.1.3 Strengthening public participation and promoting multi-agent governance

In the process of making relevant laws and the system of the RLS, all localities should make institutional and procedural arrangements for stakeholder participation in legislative hearings, idea solicitation, citizen observation, problem reflection, and information sharing. In the process of making and revising relevant policies, planning, programs of the RLS, and the opinions of stakeholders should be fully consulted to make appropriate amendments and improvements. Representatives of relevant stakeholders should be invited

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

to the meetings held by river leaders and encouraged to submit comments and suggestions. The River Leader System Office should promptly disclose the evaluation results of the river leaders, and encourage inquiries from the public. In the relevant regulations of the RLS, the work links that require public participation should be clearly defined in various places. The basic procedure of public participation should be regulated, including: information release, information feedback and collection, information exchange and management decisions (Zhang et al., 2018).

7.1.4 Promoting officials of the RLS Office and optimizing assessment mechanism of the RLS

Firstly, officials of River Leader System Offices in all areas should be promoted. In order to give river leaders more power and enhance their authority, the River Leader System Office should be set in the offices of the governments. Secondly, according to the relevant regulations of the RLS, the functions, organizations and staffing of relevant departments and the actual situations of each region, the responsibilities of river leaders, river leader system offices, and relevant departments should be classified and refined. Minimum requirements should be set to establish a more scientifically-based responsibility and assessment system of the RLS. Thirdly, we need to moderately expand the assessment subjects. In addition to the assessments of superiors to subordinates in the system, in order to ensure the independence, accuracy and objectivity of assessments, more authoritative and impartial third-party institutions or experts in related fields should be invited to contribute to the third-party evaluation of the RLS. In terms of some indicators related to the people's sense of gain, in order to make the assessment process more transparent and the assessment results more objective, stakeholders could be invited to listen to the river leaders' work reports and score them anonymously.

7.2 Long-term suggestions

7.2.1 Constructing the watershed ecology and environment governance system

In order to protect watershed ecology and the environment, a watershed governance system that consists of overall coordination, management implementation, scientific evaluation and social participation mechanisms should be constructed. The overall coordination mechanism is a council system involving various stakeholders such as the central government, provincial and municipal governments, communities, industry associations, and non-profit organizations. The council has decision-making and supervision rights. The management implementation mechanism is undertaken by the watershed agencies sent by various departments, the relevant departments of relevant provincial administrative regions, and the river leader system offices of relevant provincial administrative regions. Under the supervision of the Watershed Supervision Bureau of the Ministry of Ecology and Environment, the stakeholders implement relevant laws, regulations and comprehensive planning of watershed ecology and environmental protection. The scientific consultation and assessment are implemented by an independent scientific committee, whichcan provide scientific support, such as for making strategies and planning, performance assessments of protection and development. The social participation mechanism focuses on ensuring the effective participation of enterprises and the public to protect the basic interests of various stakeholders.

7.2.2 Establishing and improving the coordination mechanism for watershed governance

The relevant institutions and mechanisms of watershed ecology and environmental protection should strengthen communication and coordination. Relevant efforts should be unified in four aspects. Firstly, unified coordination: The Watershed Supervision Bureau of the Ministry of Ecology and Environment should coordinate relevant watershed/cross-regional ecological and environmental protection agencies/mechanisms for comprehensive consultation. Secondly, unified monitoring: The unified watershed ecology and environmental monitoring network should be built, and the existing relevant monitoring points in the watershed should be integrated and optimized. The monitoring should be carried out according to unified standards. Relevant data should be reasonably open and shared among stakeholders. Thirdly, unified supervision: The joint enforcement of mountains, rivers, forests, fields and lakes in the watershed should be promoted. The connection between administrative law enforcement and criminal justice should be strengthened to increase the deterrence against illegal acts involving the watershed ecology and environment. Fourthly, unified assessment: As authorized by the Ministry of Ecology and Environment, according to relevant laws, planning, and policies, the Watershed Supervision Bureau of the Ministry of Ecology and Environment conducts the implementation performance assessment of the stakeholders. On this basis, the application of the assessment results should be strengthened.

References

Cai P H. 2019. The implementation dilemma and perfect path of River Chief System. *Journal of Social Science of Harbin Normal University*, 10(1): 34–37. (in Chinese)

Chen L. 2017. Insisting on ecology first and green development, promoting long term governance of rivers through the River Leader System. *People's Daily*, March 12, 2017. (in Chinese)

DEE (Department of the Environment and Energy, Australian government). 2016. Integrated water resource management in Australia: The Murray-Darling Basin initiative. http://www.environment.gov.au/node/24407. Feb.10, 2016.

E J P. 2018. Promoting the River Leader System from establishment to full effect. http://opinion.people.com.cn/GB/n1/2018/0717/c1003-30150833.

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

html. July 17, 2018. (in Chinese)

EPA (US Environmental Protection Agency). 2016. The great lakes. www.epa.gov/greatlakes/atlas/glat-ch5.html. Feb. 01, 2016.

Fu S S, Wen T F, Cheng J Q, et al. 2019a. Intention and development of river chief system. *China Water Resources*, (6): 8–10. (in Chinese)

Fu S S, Zhao N F, Wu X D. 2019b. Similarity analysis of the River Chief System and the Household Contract Responsibility System — Also on the development trend of the River Chief System. *Water Resources Development Research*, 19(2): 35–39, 69. (in Chinese)

GOSC (General Office of the State Council of China). 2005. Notice on strengthening drinking water safety. www.gov.cn/gongbao/content/2005/content_80641.htm. Viewed 17 Aug 2005. (in Chinese)

GOMWR (General Office of the Ministry of Water Resources of China). 1997. Reports of previous national water conservancy conferences (1993–1997). Beijing: Ministry of Water Resources. (in Chinese)

Hall P, Taylor R. 1996. Political science and the three new institutionalisms. *Political Studies*, 44(5): 936–957.

Huang A B. 2015. The River Leader System: Institutional form and innovation trend. *Academia Bimestrie*, (4): 141–147. (in Chinese)

Jiang B. 2016. Considerations for Leader Responsible System in governance of rivers and lakes. *China Water Resources*, (21): 6–7. (in Chinese)

Li Y J. 2019. The River Chief System: the water management system with Chinese Characteristics and Experience. *Chongqing Social Sciences*, (5): 51–62. (in Chinese)

Li Y S, Hu Y. 2017. Analysis on the path of integrated management of watershed ecology and environment—Based on the perspective of the River Leader System reform. *Studies on Socialism with Chinese Characteristics*, (4): 73–77. (in Chinese)

Li Y. 2017. History, function and development of River Chief System. *Environmental Protection*, 45(16): 7–10. (in Chinese)

Liu B. 2016. The River Leader System cannot replace watershed management. *Decision-Making*, (9): 89. (in Chinese)

Liu C. 2017. Thinking on the legal system construction of River Governor System from the perspective of environmental law. *Environmental Protection*, 45(9): 24–29. (in Chinese)

Liu F X, He T Y, Zhou Y Z. 2016. Analysis on the legalization of "the River Leader System" in the context of governance modernization. *Zhejiang Academic Journal*, (6): 120–123. (in Chinese)

Liu H Z, Liu X C, Zhou S P, et al. 2016. Thoughts on deepening the system of River Chief. *Environmental Protection*, 44(24): 43–46. (in Chinese)

Millington P. 2016. Integrated river basin management: From concepts to good practice. http://www.documents.shihang.org/curated/zh/2006/02/9727476/integrated-river-basin-management-concepts-good-practice. Feb. 1, 2016.

Ministry of Water Resources. 2014a. Guidance on strengthening the management of rivers and lakes. www.gov.cn/xinwen/2014-03/21/ content_2643212.htm. March 21, 2014. (in Chinese)

Ministry of Water Resources. 2014b. Notice on the pilot work of innovating the management mechanism of rivers and lakes. http://www.mwr.gov.c n/zw/tzgg/tzgs/201702/t20170213_858206.html. Viewed 19 Sept 2014. (in Chinese)

National People's Congress Standing Committee. 1997. Flood control law. http://www.gov.cn/ztzl/2006-07/27/content_347485.htm. Viewed on 29 Aug 1997. (in Chinese)

North D C. 1990. Institutions, institutional change and economic performance. Cambridge, UK: Cambridge University Press.

Ren M. 2015. The river chief system: A sample study of inter-departmental collaboration in Chinese government watershed governance. *Journal of Beijing Administration Institute*, (3): 25–31. (in Chinese)

SC (State Council of China). 1991. Regulations on reservoir dam safety management. http://www.gov.cn/ziliao/flfg/2005-09/27/content_70631.htm. March 22, 1991. (in Chinese)

Shen M H. 2018. Analysis on the River Chief System from the view of institutional economics. *China Population, Resources and Environment*, 28(1): 134–139. (in Chinese)

Wang L F, Tong J X, Li Y. 2019. River Chief System (RCS): An experiment on cross-sectoral coordination of watershed governance. *Frontiers of Environmental Science & Engineering*, 13(4): 1–3.

Wang L Z, Pang R. 2018. Temporal and spatial evolution mechanism and policy diffusion path of China's public policy: A study of the implementation and changes of River-Chief System. *Chinese Public Administration*, (5): 63–69. (in Chinese)

Xiong W, Peng X Z. 2017. River Leader System: long term river governance. Wuhan: Changjiang Publishing. (in Chinese)

Xu H F, Wang S. 2016. Study of an integrated river basin management model and its implications for river and lake management in China. *Water Resources Protection*, 32(6): 51–56. (in Chinese)

Yan H N, Zeng D. 2019. The dilemma of and the reflection on water environment governance innovation by the River Chief System: From the perspective of collaborative governance. *Journal of Beijing Administration Institute*, (2): 7–17. (in Chinese)

Yang G S, Yu X B, Li H P, et al. 2004. Introduction on integrated watershed management. Beijing: Science Press. (in Chinese)

Zhan Y Y. 2019. River Chief System: Advantage and disadvantage, argument and improvement. *Chinese Journal of Environmental Management*. 11(4): 93–98. (in Chinese)

Zhang C L, Li Y M, Qin H B, et al. 2019. Suggestions on further perfecting River Chief System to promote river and lake management in China. *China Water Resources*, (16): 13–15. (in Chinese)

Zhang C L, Zhang S, Yang W S, et al. 2018. Evaluation on the River Leader Policy of Fujian Ecological Civilization Experimental Area. *Chinese Journal of Environmental Management*, 10(3): 59–64. (in Chinese)

Zhou J G, Xiong Y. 2017. The River Chief System: How is continuous innovation possible? A two-dimension analysis on the basis of both policy text and reform practice. *Jiangsu Social Sciences*, (4): 38–47. (in Chinese)

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

河长制历史变迁的制度分析

郑诗豪[1]，秦海波[2]，李颖明[3,4]，郝　亮[5]，郭丰源[3,6]，张丛林[3,4]

1. 天津大学水利工程仿真与安全国家重点实验室，天津 300072；
2. 新疆大学政治与公共管理学院，乌鲁木齐 830046；
3. 中国科学院科技战略咨询研究院，北京 100190；
4. 中国科学院大学公共政策与管理学院，北京 100049；
5. 生态环境部环境与经济政策研究中心，北京 100029；
6. 中华人民共和国工业和信息化部，北京 100804

摘　要：在全面推行河长制过程中，暴露出部分工作进展缓慢、效果不如预期等问题。借鉴历史制度主义的视角，剖析河长制的历史变迁过程，可以发现：2014 年河长制由地方自主探索并相互借鉴经验发展为由水利部向全国推广、2016 年河长制正式上升至国家层面，是河长制历史变迁的两个关键节点。其历史变迁过程可据此划分为创新与形成、试点与扩散和推广与强化三个阶段。中国河湖问题种类的增多和复杂化是其历史变迁的重要推动力，路径依赖现象主要体现在扩散范围、问题导向、主要任务和管理手段四个方面。目前，河长制在流域/跨区域管护、任务统筹、多元参与、考核机制等方面尚有不足，本文提出了对策与建议。从短期来看，河长制将不断完善强化；从长远来看，河长制将向流域综合管理转型。

关键词：河长制；历史制度主义；历史变迁；发展趋势

Downloaded From: https://complete.bioone.org/journals/Journal-of-Resources-and-Ecology on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use