

ORIGINAL RESEARCH ARTICLE

The development of the river chief in Nantong and Huzhou: Policy transfer in an authoritarian system

David P. Dolowitz^{1*}  and Ye Xiong² ¹Department of Politics, Faculty of Humanities and Social Sciences, University of Liverpool, Liverpool, United Kingdom²Department of Public Administration, Institute of Environment and Health, Nanjing University of Information Science and Technology, Nanjing, Jiangsu, China**Abstract**

The river chief system is an institutional innovation designed to mitigate the fragmentation of watershed governance in China. The idea was to develop offices of river chiefs and designate named individuals as responsible for water quality across all regions and levels of government. This article examines the mechanisms that led to the transfer of the river chief model from Wuxi to the Jiangsu Provincial government, Nantong, and Huzhou. The objective is to examine how and why Nantong officials created a virtual replica of the Jiangsu provincial policy, while Huzhou officials transformed the original Wuxi model to form their unique river chief. To do this, we undertook an extensive review of the core documents related to the river chief systems in Nantong and Huzhou, which led to a series of interviews, confirming our understanding of the procedures and outcomes of the transfer process. The result demonstrated the importance of motivation, structural context, and the ability to engage in re-engineering in policy transfer to understand the outcomes of the transfer process. As such, this study demonstrates, unlike much of the existing literature, that these aspects are worth further study when investigating the policy transfer process.

Keywords: River chief; Policy transfer; Learning; China***Corresponding author:**David P. Dolowitz
(dolowitz@liv.ac.uk)**Citation:** Dolowitz DP, Xiong Y. The development of the river chief in Nantong and Huzhou: Policy transfer in an authoritarian system. *Explora Environ Resour.* 2025;2(3):025110018.
doi: 10.36922/EER025110018**Received:** March 11, 2025**1st revised:** April 25, 2025**2nd revised:** May 5, 2025**Accepted:** May 15, 2025**Published online:** July 21, 2025**Copyright:** © 2025 Author(s). This is an Open-Access article distributed under the terms of the Creative Commons Attribution License, permitting distribution, and reproduction in any medium, provided the original work is properly cited.**Publisher's Note:** AccScience Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.**1. Introduction**

After the open door policy was launched in the late 1970s and 1980s, the Chinese central government and Chinese Communist Party (CCP) began shifting decision-making powers to lower-level governing divisions. Initially, this focused on reducing restrictions on lower-level governments' ability to engage in (or encourage) private market activities (including the launch of special enterprise zones). Based on the success and progress of these initial reforms, the party and government began to introduce policies designed to decentralize elements of environmental policymaking and implementation (particularly after the 18th and 19th national congresses of the CCP). As a result, when a cyanobacteria outbreak occurred in Lake Taihu, the Jiangsu Provincial authority authorized a pilot project that led to the first river chief system designed to address the outbreak without turning to central authorities.¹

By loosening policymaking restrictions at lower levels of government, the Chinese central government and party created “policy laborites”² that helped launch the internal policy transfer processes – phenomena that have occurred in the United States since its founding.³ As local governments engaged in policy experimentation (under an environment of intense competition to be seen as leading or advanced), the same issues that have been discussed in the policy transfer literature emerged across China, including problems associated with the transfer of what is often discussed as “best practice” models.⁴⁻¹⁶ To illustrate this, we will draw on the movement of the river chief from Wuxi to the Jiangsu Provincial government, Nantong, and Huzhou, focusing on the role of structural and individual motivations in shaping the outcomes of the transfer process.

In 2007, a cyanobacteria outbreak on Taihu Lake threatened Wuxi’s drinking water. In response, Jiangsu province issued the Wuxi City river section water quality control objectives and assessment methods policy (on a trial basis). The core idea was to allow Wuxi to establish a river chief system that held the named party and government officials accountable for water quality management and restoration. In addition to holding named individuals accountable for water quality (based on the level of core pollutants in the water), the trial instituted the office of the river chief to better coordinate the range of departments and subunits involved in water management. The problem created by having over 10 different departments and subunits involved in water management was the confusion of responsibility for overall water quality and the development of numerous approaches and policies governing the same body of water. Furthermore, having multiple agencies responsible for water led to a lack of bureaucratic and individual accountability in water management. To give a flavor of this issue, we note that the core departments involved in water management include (but are not limited to) the Water Conservancy Department, the Environmental Protection Bureau, the Bureau of Housing and Urban–Rural Development, the Development and Reform Bureau, the Department of Natural Resources, the Health Bureau, the Bureau of Agriculture and Rural Affairs, and even the Economy and Trade Bureau. This complex arrangement led to a situation where:

[T]he local water pollution control is not effective, though the local governors are accountable for this, they would shirk part of their responsibility toward the departments in the vertical line. Therefore, local governors are not motivated to take responsibility for water pollution control.^{17(p1)}

The issue becomes even more significant when it is realized that most rivers in China flow across different administrative areas. This created a situation where local governments and agencies found themselves in conflict when pollution events occurred, particularly when upstream pollution impacted downstream jurisdictions and when left and right banks fell under different administrative jurisdictions.¹⁷

To address these (and other) issues, Wuxi established river chiefs at the municipal and county levels to monitor and take direct responsibility for 79 river sections in the area. Based on Wuxi’s success in cleaning river pollution and bringing accountability to the water management system, other municipalities began their experiments with river chiefs.¹⁸ As information on the river chief system filtered up to provincial governments and eventually the central government (and the party apparatus), a decision was taken to implement the river chief nationwide between 2016 and 2018.

The problem we will examine in the remainder of this article is that the best practice developed in Wuxi turned out to be the best for only a few places outside of Wuxi.¹⁹⁻²² Part of the reason for the disjuncture is due to the need for learning in the transfer process and the complexity of the processes needed to engage in hard learning versus soft learning.^{15,23,24} This comes to the forefront when it is realized that transferred information tends to move through a range of networks, agents, and institutions during the transfer and adaptation processes.²⁵⁻³⁴

While discussions of how policies are translated (transformed) during the transfer process have added to the transfer literature, in general, these discussions fit into the original continuum offered by Dolowitz and Marsh⁵ relating to what happens to a policy as it transfers and enters its new setting. Specifically, Dolowitz and Marsh⁷ argue that transfer can fall along a continuum running from a perfect copy of the original model to being translated to such an extent that a new policy is little more than a hybrid of many different policies drawn from a range of actors and settings. As such, we will be utilizing a slightly modified version of the continuum originally offered by Dolowitz and Marsh⁵ (Figure 1) to analyze the transfer of the Wuxi river chief system.

At its base, a transfer is possible because policymakers face similar issues and challenges despite differences between systems and settings. When faced with similar issues, transfer is an attractive option because it allows for a degree of certainty and speed in developing a solution. After all, policymakers can see what has already been done to address the issue.³⁵

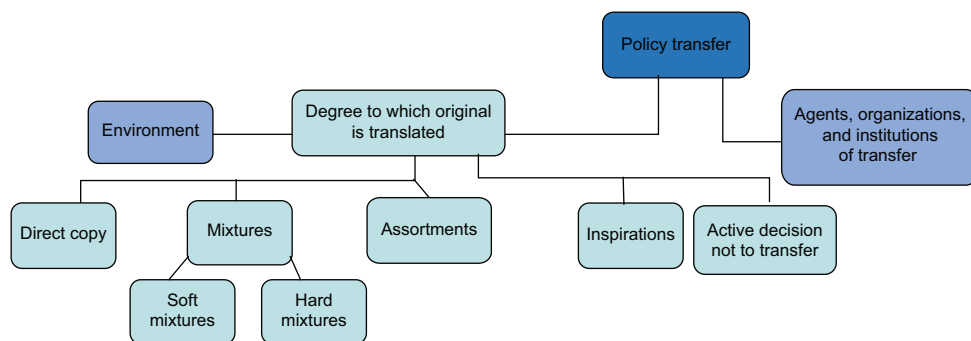


Figure 1. The transformative process of policy transfer

As shown in Figure 1, the transfer process can follow several trajectories:

- (i) Direct copy: Tends to involve little to no transformation.
- (ii) Mixtures: Tend to look much like the original but involve a greater or lesser degree of transformation during the transfer and implementation processes.
- (iii) Assortments: Tend to involve a wide network of agents and institutions that make considerable transformations of the original model (or models) during the transfer, development, and implementation processes.
- (iv) Inspiration: Involve ideational transfer but little actual policy movement, can involve a single entrepreneur or a wide number of network agents.
- (v) Non-transfer: Occurs when agents involved in the transfer process actively learn and decide that they do not want to do what others have done, regardless of the translation process involved in the decision.

In China, the attraction of turning to others for information and ideas has increased over the past 20 years, as subnational governments have engaged in a semi-encouraged competition to be seen by higher-level administrators and governing authorities as policy innovators and economic magnets for private sector investment and state-owned enterprises.¹

While transfer tends to be linked to success within the literature, we will demonstrate that despite the initial success of the Wuxi model as it entered new locations, it did not prove to be as effective even when the transfer occurred between municipalities facing similar issues were part of a single province and emerged as a virtual copy of the original model.³⁶

Part of the reason for this (despite the hierarchical nature of authoritarian systems) relates to factors that

shape actors' perceptions and motivations in the transfer process, including pre-existing structures, policies, mental maps,³⁷ values³⁸ socio-political moods, and the institutional "life spaces" agents of transfer inhabited.³⁹ As a result, transfer and learning tend to be conditioned by discursive paradigms, ideational circuits, institutional frameworks, and power structures surrounding the agents involved in the movement and implementation of transferred ideas and policies, regardless of the political system in which they operate.

Due to these internal motivational and external structural factors, transferring policy, especially when a copy is taken by a jurisdiction operating under the same authority, is not as straightforward as often presented in the transfer literature. Rather, successful transfer often involves adaptation and change, based on internal and collective needs that influence how the agents involved perceive their roles and the role of the transferred policy.

In other words, the motivations of the transfer agents and where they fit into the power relations of the policymaking system shape the outcomes of the transfer. This is true regardless of whether the transfer results in a close copy of the original model or an assortment that combines many different models (Figure 1). As a result, even when agents are predisposed to copying a model, there is no guarantee that it will work as it did in the originating system. This is particularly true when agents are inclined to see similarity where it does not exist or, as in the case of Nantong, engage in copying to gain legitimacy (particularly where promotion is based on higher-level government and agency) rather than a desire to improve the situation.

Similarly, contextual factors shape motivations and abilities, which can lead to unexpected outcomes that, despite the transfer literature's focus on success, offer little guarantee of success. This study demonstrates that contextual factors are often more important in shaping the outcomes of transfer than the policy that is ultimately developed in response to the transfer.⁴⁰

¹ While not the focus of this article, the globalization of information and spread of information technology have made accessing information related to policy ideas and little more than a mouse click away, even if it's poor, misleading, and false.

2. Methods and data

This study is designed around a traditional small-n case study,⁴¹ which takes the transfer of the river chief system from Wuxi as an example of how different motivational factors and structural constraints impact the transfer process and outcomes. Specifically, we selected two representative prefecture-level cities to observe how they transfer the river chief model. The idea was to investigate the effect of modifying a model on the outcomes in the transferring jurisdiction. We selected Nantong because it lies in Jiangsu Province, which was the home of Wuxi, thus reducing the environmental differences discussed above. Besides, the transfer occurred after the higher-level provincial government introduced a requirement that all municipalities produce river chiefs. This requirement not only provided an incentive for engaging in the transfer process, but also set a base model for the jurisdictions that had not already developed their river chief systems in the province.

Our second case, Huzhou, was selected as a comparison case as it fell under the jurisdiction of Zhejiang Province. This provided a different setting and underlying structural factors from those that embedded actors in Nantong. In addition, unlike Nantong, Huzhou transferred the river chief system without being subjected to a requirement from the Zhejiang Provincial authorities. This allowed Huzhou a degree of freedom in transferring and developing its river chief system that is unavailable to policymakers in Nantong. We argue that this structural difference (when combined with other motivational factors) led to a much more dynamic river chief policy based on a mixture of what others had done but modified to better fit their context and needs.

As Table 1 illustrates, this study utilized numerous methods to collect data from a range of sources. The core data used in this study consisted of official government documents associated with the introduction of the river

chief that were issued by all levels of the administrative hierarchy associated with Wuxi, Nantong, and Huzhou. The documents included among others: policy texts, legislative releases, manuals, and the One River and One Policy plan.^{41,42} To support this data, we also examined official government work reports associated with the implementation of the two river chief systems and performance evaluation reports of river and lake management and protection in the two regions.

In addition, we consulted a range of secondary documents extending from official press releases-relevant articles and news stories (both in Chinese and English) to organizational reports issued by international organizations (such as the World Wide Fund for Nature) and international governing organizations (such as the World Bank and the International Monetary Fund).

To gather this data, we utilized open websites found through DuckDuckGo and Google searches, internal ministerial and government search engines, institutional databases (Web of Science), and archival research within relevant ministries and departments. To prevent being overly influenced by the tendency to promote political performance in official reports, we also collected social media reports and interviews to strengthen our research findings. Finally, based on 40,000 words (in Chinese) of case material, the qualitative data analysis software NVivo 10.0 (Lumivero, USA) was used for coding and recording the text.

With the support of the National Social Science Fund of China, we also conducted a series of field investigations in Nantong and Huzhou between October and November 2019. These consisted of 26 semi-structured interviews with the staff of the river chief's office in the two municipalities. These interviews were semi-structured and based on the following questions:

- (i) Did you engage in any type of policy transfer when developing your river chief system?
- (ii) If you engaged in policy transfer, can you explain why?

Table 1. Data sources and classifications

Data sources	Data classification	Number of documents
Primary data	Transcripts of semi-structured interviews (in Chinese)	26
	On-site recordings of the debriefing sessions (in Chinese)	3
	Author's investigation diary (in Chinese)	2
Secondary data	Policy documents (in Chinese and English)	10
	Internet search data: articles, NGO/IGO documents, social media coverage, and government website coverage (in Chinese and English)	200
	Internal materials of government departments (manuals, assessment documents, and research reports [in Chinese and English])	15

Abbreviations: IGO: Intergovernmental organization; NGO: Non-governmental organization.

- (iii) Are there any major differences between your river chief system policies and those of Wuxi City?
- (iv) Was there any policy learning in the process of developing your river chief?
- (v) What achievements have you made based on the transfer of your river chief system?
- (vi) Can you discuss any problems that have been identified in the operation of your river chief system?

In addition to these interviews, we also carried out several field visits to observe the river courses and water bodies in the municipalities under investigation, all of which were underpinned by observational logs. The combination of these sources helped assure the reliability of the data.

In summary, we utilized a “most different” case study methodology. To do this, we selected two municipalities that operated under different provincial governments, addressed different types of water structure needs, implemented their river chief system at different times, and acted under different hierarchical imperatives. By doing this, we were able to gather data for a policy transfer study that expanded beyond the singular qualitative models predominant in the literature, allowing a comparative study of different jurisdictions adopting the same base policy modeled on a single data source (Wuxi). This has allowed us to look at micro-level and meso-level factors impacting decisions related to transfer that are often overlooked by single case studies and large N quantitative studies.

3. Findings

3.1. Nantong: Transfer under pressure

As illustrated in Figure 2, the transfer of the river chief in the Nantong region is a typical example of transfer within hierarchies of governance where a higher authority absorbs a policy and subsequently promotes it back down to lower-level units.^{3,43} In the case of Jiangsu, according to our interviews, administrators were heavily influenced by the Wuxi model. However, interviews and documents also indicated that the resultant policy was not a direct copy. Rather, administrators looked at many of the models that had emerged in the province after the Wuxi model and

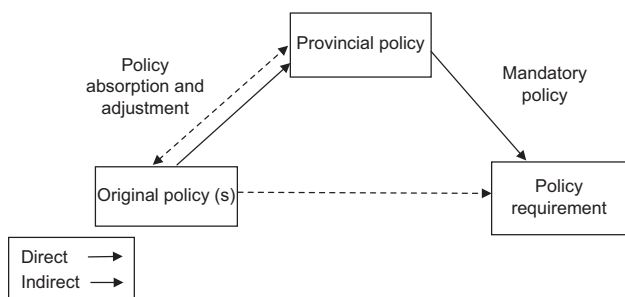


Figure 2. Policy transfer under vertical governance pressures

designed a soft mixture (Figure 1) when setting the policy that they expected lower-level governments to implement.

The Jiangsu documentation clarified the objectives, tasks, and schedule for reform. The instruction required the establishment of a river chief system in all counties, townships, village rivers, and ponds catchment areas across the province by 2015. In response, Nantong issued the Opinions on Strengthening the Work of the River Chief System of River Management in January 2014.⁴⁴ While the hierarchical pressure to comply with the directive cannot be dismissed, interviews indicated that Nantong chose to copy the Provincial model due to the local cadre’s desire “to obtain the legitimacy for the river chief system in the municipality” (X, interview, 13 September 2019).

Taking a step back, the document “Decision on Comprehensively Establishing the River Chief System and Comprehensively Strengthening the Comprehensive Improvement and Management of River Courses”⁴⁵ issued by the Wuxi Municipal Committee and the Wuxi Municipal People’s Government is the earliest official policy document related to the development of the river chief system in China. This document (and the policy contained within it) is the summary of the measures taken by Wuxi in the second half of 2007 to deal with the cyanobacteria crisis in Taihu Lake.

“Decision on Comprehensively Establishing the River Chief System” included 11 detailed policy tools covering 11 aspects of water management, including the organizational structure, appointment of river leaders, renovation planning, responsibility decomposition, work focus, law enforcement supervision, departmental division of labor, water quality monitoring, assessment and accountability, social participation, and institutional construction (“Water Quality Control Objectives and Assessment Measures for Rivers [Lakes, Reservoirs, Oscillation, and Tunnels] in Wuxi”).² The stated goal is “the complete renovation of rivers and lakes and the comprehensive improvement of the water environment.”⁴⁵

Moving back to the provincial level, Jiangsu released its river chief document in 2012.⁴⁶ This document modified the Wuxi documentation by adding a detailed explanation of the significance, guiding ideology, basic principles, and goals of the river chief system. However, the documentation also added a series of extra measures that were found in other river chief models. These were added by officials who hoped this would make Jiangsu a model province (X and Y, interviews, 14 September 2019) and, in turn, enhance the promotional prospects of Jiangsu officials. As a result,

² The annex details the list of work leadership groups and establishes an assessment indicator system.

the goal of the river chief system changed from a focus on improving water quality to a focus on the modernization of the entire river management system and river network construction across the province.

Intriguingly, while expanding the goal of the river chief beyond water quality, provincial leaders elected to simplify the choice of policy tools that had previously been used by Wuxi and other municipalities. Interviews indicated that they did this deliberately, knowing that municipal officials needed some room to maneuver once the policy was transferred back down, but “did not want to see a considerable expansion in the range of models being developed” (AAA, interview, 8 October 2019). We want to emphasize this aspect of the process because much of the literature associated with authoritarian systems overlooks how provincial leaders view their role as guides rather than dictators of the transfer process in China.

Comparing the policy texts of the river chief system in Nantong and Jiangsu Province, despite the somewhat vague nature of some elements in the Provincial documentation, Nantong chose to copy much of the language and core elements of documentation issued by Jiangsu. Specifically, we found that Nantong made only slight adjustments in the expression of the basic principles in their river chief documentation and did not change the basic spirit of provincial policies. Nantong followed the provincial policies in terms of the river chief’s guiding ideology, goals and tasks, organizational construction, and core measures. As such, from the perspective of transfer, Nantong’s river chief belongs closer to a copy than a mixture and falls well below the transformations needed to be considered an assortment of different policies when viewed from the perspective of Jiangsu Province (Figure 1).³

Significantly, this shows that when looking at transfer, it is important to consider the level of magnification being observed. When examined from the perspective of Jiangsu, Nantong appeared to have engaged in little change; however, when Nantong’s river chief is viewed from Wuxi, it appears to be more of a hard mixture because of the adjustments made by Jiangsu Provincial leadership and Nantong’s officials.

3.2. Huzhou: Assortment of policies

Huzhou issued its river chief documents, “Implementation Plan of Establishing the River Chief System in Huzhou, in 2013,”⁴⁷ and the “Implementation Opinions on Deepening

the River Chief System in 2014.”⁴⁸ Unlike Nantong, Huzhou is part of Zhejiang Province and waited until late 2017 to issue its provincial-level guidance (the “Zhejiang River Chief System Regulations”). As a result, Huzhou was able to choose how it was going to develop its river chief system without the guidance and coercive pressures of a superior governing authority.

This resulted in the development of a river chief system that involved a considerable amount of what is often discussed as hard learning, where Huzhou officials consulted a range of different river chief models. Consequently, we found that the transfer processes Huzhou undertook culminated in a system considerably more compatible with their structural and water quality needs than was the case in Nantong.

Importantly, we found that huzhou policymakers actively engaged in a hard learning process with the belief that they could discover how to embed core local party and government leaders in water management while designing a system that would be capable of holding core agents accountable for river basin governance as river chiefs (z, interview, 6 January 2020). As part of this, huzhou integrated three concepts (later transferred up to the provincial level). First, huzhou worked to develop and refine specific water control targets. To do this, huzhou put forward “three clean and three improve” goals that the river chiefs could be held accountable for achieving. These were themselves grouped into categories that specified that: the riverbank is clean, the river is smooth and clean, the water quality of the river course is significantly improved, riverbank greening is significantly improved, and the pollution intercepting capacity is significantly improved. The alterations made to these goals are important because they show that learning and adaptation occurred in the transfer process.

Second, in Huzhou, the responsibilities of river chiefs at different levels of government are explicitly established. The river chief documentation creates three core responsibilities for the municipal river chief as being: (i) the examination and approval of the work program, (ii) work promotion and coordination, and (iii) the assessment of county-level river chiefs. Implementation further defines five responsibilities for county-level river chiefs: (i) formulating and organizing the implementation of comprehensive water environment treatment plans and annual plans for river chiefs, (ii) enhancing information disclosure, (iii) organizing the supervision and assessment of township river chiefs, (iv) reporting the annual plan and summary, and (v) ensuring the delivery of key projects and works progress on time.⁴⁷⁻⁴⁹

Third, as a result of learning about its internal structural problems and how other jurisdictions dealt with the

³ This is not a surprising finding. Nantong is under the administrative control of Jiangsu. As a result of China’s hierarchical governing structure, policy outcomes tend to be closer to copies when higher-level governing authorities issue policy documents and guidelines.

divisions in the departments and other units responsible for water management, Huzhou officials wrote their documentation to specify that the municipal river chief department must take the lead in the overall coordination of the river chief system and be responsible for: (i) the development of the work program and annual plan for Huzhou, (ii) assist the river chief in performing their guidance function of lower-level river chiefs, including their coordination and supervision of the municipal and lower level activities, and (iii) to help the municipal river chief perform their routine work.

By setting out these specific responsibilities of river chiefs, not only did Huzhou move beyond the model developed in Wuxi, but it also established the expectations and conditions needed for the different levels of river chiefs to perform their duties under the coordination and guidance of the river chief office. Further showing Huzhou's efforts to learn from others was the decision to develop a more targeted and operable assessment scheme based on a scoring system that measures standards at the municipal leading department and the river chief system of the county.

In summary, in developing the river chief system, Huzhou officials examined a range of different models and then actively engaged in a learning process that led them to implement a range of policy adjustments that were based on retaining the core of the original (Wuxi) policy, but which combined this core with other municipal river chief models to better address their local needs (for specific details see: "Implementation Plan of Establishing the River Chief System in Huzhou 2013;" "Implementation Opinions on Deepening the River Chief System 2014"). As such, the transfer Huzhou undertook falls into the assortment side of the transfer continuum offered in [Figure 1](#).

4. Discussion

4.1. Situational differences, learning deficiencies, and policy failures in Nantong

Nantong has a relatively flat terrain with a water system characterized by a complex network of rivers and ditches roughly bound by the Tongyang Canal and Rutai Canal, which falls within two river basins, the Huaihe, which covers an area of more than 2,200 km² in the north and the Yangtze, that covers an area of more than 5,700 km² in the south. In this, the Yangtze River coastline in the territory is 166 km, with a surface area that extends southeast in a trumpet shape.⁴

This shows the difficulty of watershed governance in Nantong lies in the complexity of the river system within

its jurisdiction, not the lake pollution crisis that drove the design of the Wuxi river chief system.

However, rather than learning from the experience of municipalities that were facing similar water course issues, Nantong officials chose to copy much of the provincial policy, despite the implicit understanding that they could adapt the model to local needs or, as reported, "Our policy learning is mainly about the policy texts of the higher authorities. The higher authorities have also held some training meetings on the river chief system that we attended" (W, interview, 6 January 2020).

We want to highlight that the primary reason for this adherence to the provincial guidelines reflects the desire for local officials to use the river chief to gain enhanced legitimacy in the eyes of provincial leaders (allow Nantong to be seen as "good municipality") and gain performance related "points" in the belief that this would help promotional prospects. In this, Nantong officials might not be completely to blame for their adherence to systematic outlooks that led them to follow Jiangsu, given the nature of the Chinese bureaucracy and its reward and punishment mechanism.

Failing to engage in hard learning was compounded by the fact that much of Wuxi's success was not reflected in the policy texts associated with their river chief but resulted from tacit knowledge among local agents as to what was needed to address a crisis. In fact, according to the interviews with the office staff of the river chief system in Nantong, their cognition of the river chief system remained at the level of the river chief being responsible for water control (Director F, interview, 8 October 2019).

As a result of not engaging with this tacit knowledge, Nantong officials failed to incorporate critical design elements that made Wuxi's river chief system work. By focusing only on the defined policy objectives, principles, and main directions, Jiangsu and Nantong officials engaged in what is often referred to as incomplete (and, in many ways, uninformed) transfer. As a result, rather than focusing on the operational logic of the river chief, administrators in Nantong focused on daily management issues. This led them to design a management model that neglected internal and cross-departmental cooperation, which underpinned Wuxi's river chief system (Y, interview, 8 October 2019). Putting it more succinctly, an administrator in the Water Resources Bureau of Nantong noted, "Many of the contents reported today are long-term river management. there is not much about the river chief system. It is not clear what the responsibilities of the river chief are, what the current river chief has done, and what problems he has solved" (Director C, interview, 14 September 2019).

⁴ Nantong Historical Records Network. <http://www.ntszw.gov.cn/?c=index&a=show&id=2460>, (accessed 08/04/2022).⁵³

Through our document review, we also discovered that instead of focusing on methods to design the best functional river chief system, officials in Nantong saw the transfer of the river chief as an opportunity to solicit financial input from their superiors. For instance, in a working report, it was emphasized that funding for investment purposes was deemed more important than either the design of the river chief or the operation to evaluate the system completely. This was confirmed by Director C of the Nantong Water Resources Bureau:

At present, river chiefs at all levels in the city are part-time; although the city has corresponding assessment methods, its effectiveness is small, not as strict and specific as the evaluation of the Scientific Outlook on Development, unless there is a major water accident, otherwise the so-called assessment is just a formality to comply with the assessment processes (Director C, interview, 14 September 2019).

In summary, to please superiors, Nantong carried out the transfer of the river chief system to gain resources and legitimacy, which led them to neglect effective learning opportunities. This resulted in Nantong failing to effectively respond to situational differences in the model offered and their own water management needs, which ultimately resulted in lower policy performance. As found in their initial performance review, “Jiangsu Province Backbone River Management and Protection Performance Evaluation Report,” it was noted that the quality of river cleaning in Nantong was lower than the standard score received across the nation. This outcome was reconfirmed in 2019 through our field research, which found three interrelated problems. First, the function of the river chief’s office was introduced as

required, but instead of enhancing the power of the river chief, the office was found to be weak and ineffective. We believe that this was a result of the office not being an independent unit with executive power, as it was in Wuxi. Rather, the Nantong office of the river chief was set up in the municipal Water Resources Bureau, and personnel were transferred there from other departments. Unfortunately, in Nantong, the Water Resources Department has a limited role in the planning, deployment, coordination, and supervision of river management. Not only did this reduce the effectiveness of the river chief, but when the office was established, it neglected any real cross-departmental coordination and joined-up responses, which formed a core element of the more successful river chiefs and river chief offices.

Second, we found that despite the documentation relating to the implementation of the river chief, Nantong (and others) left a disjuncture between the title, powers, and activities of the river chief. As reported by the Nantong River chief’s office:

From the perspective of more than 2 years of operation, the vast majority of river chiefs are still only in name, especially some grassroots river chiefs, and they do not have a strong sense of river chiefs. They do not take the initiative to inspect, do not actively investigate, and do not timely plan and solve problems in their daily work. The river chief does not play much of an organizing and coordinating role (W, interview, 8 October 2019).

Third, we found that the assessment process used by the Nantong authorities did not link to the corresponding responsibilities of the river chief, which “led to awards with no corresponding punishments” for poor performance

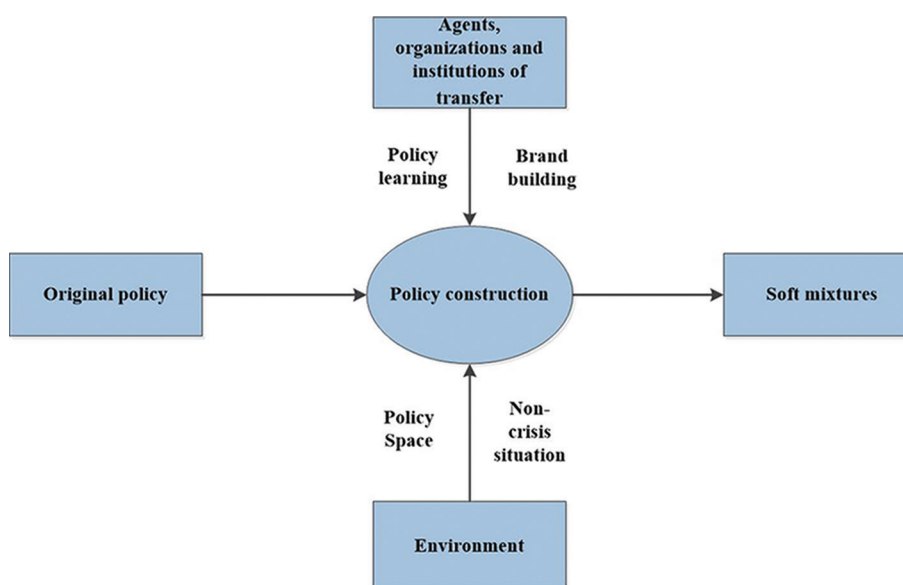


Figure 3. Huzhou’s river chief generation process

(W, interview, 8 October 2019). Overall, despite (or more accurately because) officials in Nantong following the guidance of Jiangsu Province, the performance of the river chief system has failed to reach the level found in more successful municipalities and localities.

4.2. Huzhou and the role of mixing it up

Unlike Nantong, the Huzhou river chief system reflects the constructive role that actors and the environment can play in the transfer process.⁵⁰ As illustrated in [Figure 3](#), Huzhou officials decided to develop the river chief system to be seen as a leader in the field of water management. This was itself partially motivated by the competition for acknowledgement and resources encouraged by the Chinese governing system.⁵¹

The importance of cross-governing competition was frequently mentioned in interviews with actors in Huzhou, who saw the development of the river chief as demonstrating that they were engaged in pioneering policy innovation at higher-level governing authorities. If Huzhou had merely copied Wuxi (or any of the other models that had emerged), core actors would not have been able to add “points” for high-level performance.

Not only did Huzhou administrators use the river chief to add “points” to their performance reviews, but they actively worked to make their river chief into a “brand” that could be a model for others. As reported:

In 2007, the river chief system in Wuxi formed a mature policy plan at the municipal level and was regarded as the birthplace of the river chief system. We were somewhat unconvinced about this. We want to make Huzhou River chief system a brand, even beyond the influence of Wuxi (Z, interview, 6 January 2020).

While Huzhou learned from Wuxi (D, interview, 6 January 2020), it is apparent that the two systems diverged in significant ways and that this divergence was driven, in part, by officials’ understanding of the differences in the underlying logic for setting up the river chief in Wuxi and Huzhou. Recall that the Wuxi model emerged to deal with an emergency (cyanobacteria crisis in the Taihu Lake). Huzhou’s system emerged out of the regular policy process and was seen “as a way to improve the overall watershed management” in the municipality (Z, interview, 6 January 2020).

As a result, Huzhou designed its river chief to engage in overall river management, protective work, and the development and utilization of overall water resources. This was reflected in the design of the office of the river chief, which was established “to better assist the river chief effectively perform his expanded role” (D, interview, 6 January 2020), not simply holding a person responsible

for river quality. As a result, Huzhou’s river chief office was developed not as a temporary, task-oriented organization, but as a professional organization to effectively operate and coordinate the existing bureaucratic agents involved in water management.

In addition, while Wuxi developed its system under a crisis and Nantong transferred its system under pressure from a superior level of government, Huzhou was able to transfer and construct policies autonomously. This allowed them to set their own goals by looking around for ideas and structuring them to suit their unique situation. This was supported by a constructive relationship between Huzhou and Zhejiang Province (in terms of political performance), which provided Huzhou with the resources and authority needed to construct its model of river management and protection.

Importantly, Huzhou was the first region in Zhejiang Province to design and implement a river chief system. This allowed Huzhou officials to frame their mission as making their river chief “the model for Zhejiang Province.” This led officials to include various design elements borrowed from a range of sources, packaged together to address indigenous water needs. As one interviewee noted:

The provincial government also expects us to present regional characteristics, form a demonstration effect in the region and even in the whole country, and give us a lot of support in terms of resources, including being included in the pilot innovation of river and lake management system and mechanism, and demonstration river and lake construction points (D, interview, 6 January 2020).

In summary, the transfer of the river chief system in Huzhou was based on policy learning and the assemblage of several models that were mixed with homegrown ideas. In this, policy actors were motivated by the hope of building a brand. As such, Huzhou best fits the policy transfer concept of an assembly. Because of this, when compared with Nantong, the outcome of the river chief system in Huzhou is functioning at a higher level. As reported by The Ministry of Water Resources, the Taihu Basin Administration Bureau of the Ministry of Water Resources, and the provincial Water Resources Department, the river chief in Huzhou has achieved good results in terms of improved water quality and river health (the water quality flowing into Taihu Lake remained above Class III for 13 consecutive years). In fact, in 2021, the Water Resources Bureau of Huzhou won the title of “National Advanced Collective for Comprehensively Implementing the River Chief System and Lake Chief System” issued by the Ministry of Water Resources.⁴⁹

Table 2. Movement of the river chief system

Case	Degree of transfer	Primary driving force	Degree of learning	Primary motivation	Adaptability	Outcome performance
Nantong	Copy	External	Soft	Legitimacy	Weak	Low
Huzhou	Assortment	Internal	Hard	To be seen as a leader	Strong	High

4.3. Summary discussion

This study selected Nantong and Huzhou to represent two distinctly different cases of policy transfer in developing the river chief system in China. The objective was to better understand how a core model spreads under different situations within a hierarchical governing system. We selected Nantong because its administrators were acting under the direction of a higher governing authority and chose to follow the rules and regulations developed by the offices in Jiangsu Province rather than look more widely for more appropriate models. This resulted in a near copy that failed to account for local needs or structures. Part of the reason for this was that officials were motivated to appease higher-level officials. Had Nantong officials undertaken a more informed process of policy development (including modeling their policy on what had been implemented in other “similar” municipalities within Jiangsu), based on the needs of the municipality and its water courses, we believe that the outcomes of the transfer process would have been better than those to date.

We selected Huzhou because its officials were acting under their own initiative. As a result, this study demonstrated that Huzhou represents the advantages associated with harder forms of learning in the transfer process that voluntary transfer can encourage. In the case of Huzhou, this included understanding the specific needs of the water resources in Huzhou (and the wider Zhejiang Province) and how other similar jurisdictions operated their river chief systems. This informed transfer and learning process allowed Huzhou officials to consider how different models could be assimilated into a new, more appropriate, and effective system.

Considering Chinese governing structures, once a higher-level government introduces a policy, lower-level governments must act to implement it. In the case of Nantong, while the Provincial guidelines allowed a degree of freedom in how the river chief was designed and operated, Nantong officials had to carry out the wishes of the Jiangsu Provincial government. In this, we found that this response was highly impacted by the institutional setting, structuring how actors saw the transfer and thus, what motivations they prioritized.

In contrast, Huzhou was not subjected to direct external coercive pressure, as its superior government had not issued mandatory policy requirements around river management.

As a result, Huzhou authorities had the freedom (and time) to develop and institute a river chief system based on a different set of motivational factors from those that drove officials in Nantong. One of the primary reasons that Huzhou officials voluntarily engaged in the transfer process was their desire to be seen as provincial leaders who could offer a model that was even better than the Wuxi model.

Concerning the transfer direction, Nantong reflects the vertical transfer path of “absorption radiation,” where the Jiangsu Provincial Government absorbed Wuxi’s chief river system, slightly adapted it, and then promoted it across the province. During this process, the river chief system underwent two stages of transfer translation: bottom-up and top-down. In the bottom-up process, the Jiangsu Provincial Government adjusted the original policies, adding regulatory requirements while deleting some of the specific institutional design content. In the top-down process, Nantong primarily copied the Provincial guide. This uninformed/incomplete transfer subsequently led to outcome problems (in relation to water quality measures) that are still apparent in the Nantong region.

In contrast, Huzhou’s transfer process had no time pressures, allowing transfer agents to engage in horizontal (between municipal governments) transfer at their own pace. This allowed for a considerably better learning environment that was enhanced by the motivation of officials in Huzhou to be seen as policy innovators and use the river chief to improve the conditions and operation of their river basin management.^{49,51}

We want to emphasize that despite both jurisdictions being under the direction of the central government’s authority, as shown in [Table 2](#), different motivations drove the actors in Nantong and Huzhou, and that these motivations help explain the different types of transfer that occurred. Recall that the policy transfer behavior of actors in Nantong reflects legitimacy orientation, which led them to implement the policy spirit of their superiors, complete the task goals set by their superiors, and obtain the legitimate recognition of their superiors. On the other hand, the actors in Huzhou were motivated by the desire to improve the performance of watershed governance and create a regional policy brand.

In conclusion, while the study design limits our core findings to Nantong and Huzhou, what it does suggest is that motivational factors need to be considered not only in

the transfer literature but also in the study of how lower-level governing units design and implement policies in authoritarian policy regimes. As demonstrated, with the proper motivation, learning can and does occur within authoritarian governing institutions, and this learning can be shared not only internally but also has the potential to transfer outside the Chinese governing system.

5. Conclusion

The development of the river chief system in China can provide insights into the policy learning and transfer processes occurring in authoritarian systems. For this study, two “most different” jurisdictions were selected to see how and why the transfer of a core model led to different outcomes. This study broadens the way policy transfer and learning have been studied in China by examining how two different jurisdictions engaged in the transfer process of a core model.⁵² Because we examined point-spoke transfer, one of the primary lessons to emerge from the study is that even when jurisdictions operate under the same centralized governing system, the institutional environment cannot guarantee that the transfer of policy innovations will lead to the same model emerging across jurisdictions.

This finding suggests a second major conclusion that has been emerging within the transfer literature: when examining policy transfer, policy learning (both what is learned and how the agents of transfer are engaged in the learning process) becomes an important variable in what gets transferred. In this, the better the agents of change understand their own needs and the environment they are operating in, the more likely they are (even in authoritarian systems) to engage in hard learning, and the harder the learning is, the more likely policy transfer will result in success.

Third, when engaging in and studying instances of policy transfer, it is important to understand one’s environment; it is just as important to understand what is being transferred. While it is possible to copy a model successfully, it is unlikely that the model will bring the same success that drew policymakers to it when implemented into a new environment. As such, when engaged in policy transfer, the more models that are examined, the better they are understood technically and tacitly, hence the better the policy will be developed once it is introduced by those engaged in the transfer.

Fourth, while seldom discussed in the transfer literature, the motivations and structural boundaries that restrict and shape decisions of those involved in the transfer are vital. Not only can motivations derail or encourage more advanced forms of learning and policy development, but when viewed through system constraints and facilitators, these motivations can help to explain the type of transfer that

occurs. In short, policy transfer always involves changing the policy operating context. This means that a policy innovation that produces improved performance in the original models cannot be guaranteed to produce the same outcome in the new setting, particularly if the motivations for the transfer are not aligned with harder forms of learning.

While these findings are robust, we offer three suggestions for future research based on our findings. First, those interested in policy transfer and how it relates to policy leaning and modification should start to engage in point-spoke studies. More specifically, transfer studies in China should start to look at how a single model is transferred and transformed (or not) across multiple jurisdictions (e.g., municipalities, provinces, villages). This will better enable researchers to understand the hidden factors in the policymaking processes that influence decision-making and policymaking at lower levels of government as they function in the hierarchical structures of the state and party in China. Second, while we have focused on an area with a degree of freedom to alter and develop a policy model, similar studies should be conducted in areas where freedom is less apparent. This could help better explain the role of system-level factors in the transfer process. Third, while a range of studies investigate different levels of governance in the transfer process, more work needs to be done in China. This research should involve not only how policies move across governing levels (and bodies), but also how different provinces engage in the transfer process. This should help researchers and policymakers understand how governance operates in the Chinese setting.

Overall, through the two representative cases of replication and hybridization, our study of the river chief system attempts to break the stereotypical perception of policy transfer in authoritative countries as an undifferentiated replication. This study also reveals the experience of policy learning under Chinese hierarchical interactions that endowed policy innovations with situational adaptability, which is undoubtedly of theoretical value to the study of policy transfer. This suggests future studies should focus not only on what was transferred, but also on how it occurred and the motivations driving the process. These motivations are often embedded in institutional structures that shape not only what is possible but also what is perceived to be appropriate during policy transfer and development.

Acknowledgments

None.

Funding

This research was supported by the Youth Project of the National Social Science Fund of China (No. 24CZZ006).

Conflict of interest

The authors declare that they have no competing interests.

Author contributions

Conceptualization: All authors

Investigation: All authors

Methodology: All authors

Writing – original draft: All authors

Writing – review & editing: All authors

Ethics approval and consent to participate

This study was reviewed and approved as part of the grant application process (Approval ID.: 24CZZ006). Informed consent was obtained from all individual participants included in the study, and autonomy was guaranteed.

Consent for publication

All participants agreed to the quoted material on condition of autonomy unless otherwise indicated.

Availability of data

Data used in this work are available from one of the authors (825654699@qq.com) upon reasonable request.

References

1. Nanjing Great Wall Land Real Estate Assets Appraisal Cost Appraisal Office. *Performance Evaluation Report of Jiangsu Province's Backbone River Management and Protection Project (2014)*. Internal Documents Internal Archives - Non-Public; 2015.
2. Volden C. States as policy laboratories: Emulating success in the children's health insurance program. *Am J Polit Sci.* 2006;50(2):294-312.
doi: 10.1111/j.1540-5907.2006.00185.x
3. Zhang H. Policy transfer and policy experimentation in China: The case of state-sponsored student loans. *Policy Stud.* 2023;45(6): 929-947.
doi: 10.1080/01442872.2023.2243830
4. Dolowitz D. Does transfer lead to learning? The international movement of information. *Novos Estudos.* 2017;17(1):35-56.
5. Dolowitz D, Marsh D. Who learns what from whom: A review of the policy transfer literature. *Polit Stud.* 1996;44(2):343-357.
doi: 10.1111/j.1467-9248.1996.tb00334.x
6. Dolowitz D, Marsh D. The future of policy transfer research. *Polit Stud Rev.* 2012;10(2):339-345.
doi: 10.1111/j.1478-9302.2012.00274.x
7. Dolowitz DP, Marsh D. Learning from abroad: The role of policy transfer in contemporary policy-making. *Governance.* 2000;13(1):5-24.
doi: 10.1111/0952-1895.00121
8. Evans M, Davies J. Understanding policy transfer: A multi-level, multidisciplinary perspective. *Public Adm.* 1999;77(2):361-85.
doi: 10.1111/1467-9299.00158
9. Evans M. Policy transfer in critical perspective. *Policy Stud.* 2009;30(3):243-268.
doi: 10.1080/01442870902863828
10. Jacoby W. Talking the talk and walking the walk. In: Bonker F, Muller K, Pickel A, editors. *Post-Communist Transformation and the Social Sciences*. Maryland, USA: Rowman and Littlefield; 2002. p. 129-151.
11. Kerber W, Eckardt M. *Policy Learning in Europe Thünen-Series of Applied Economic Theory - Working Paper No. 48*. Rostock: Universität Rostock, Institut für Volkswirtschaftslehre; 2005.
12. James O, Lodge M. The limitations of 'policy transfer' and 'lesson drawing' for public policy research. *Polit Stud Rev.* 2003;1(2):179-193.
doi: 10.1111/1478-9299.t01-1-00003
13. Marsh D, Sharman JC. Policy diffusion and policy transfer. *Policy Stud.* 2009;30(3):269-288.
doi: 10.1080/01442870902863851
14. Peck J. Geographies of policy: From transfer-diffusion to mobility-mutation. *Prog Hum Geogr.* 2011;35(6):773-797.
doi: 10.1177/030913251039401
15. Rose R. What is lesson-drawing? *J Public Policy.* 1991;11(1):3-30.
16. Wolman H, Page E. Policy transfer among local governments: An information-theory approach. *Governance.* 2002; 15(4):577-501.
doi: 10.1111/1468-0491.00198
17. Hao Y, Wan T. *The River Chief System and an Ecological Initiative for Public Participation in China*. Berlin: Springer Nature; 2023.
18. Zhang Z, Xiong C, Yang Y, Liang C, Jiang S. What makes the river chief system in China viable? Examples from the huaihe river basin. *Sustainability.* 2022;14(10):6329.
doi: 10.3390/su14106329
19. Lundvall B, Tomlinson M. International benchmarking as a policy learning tool. In: Rodrigues M, editor. *The New Knowledge Economy in Europe*. United Kingdom: Edward Elgar; 2002. p. 203-231.
20. Martin G, Beaumont P. Diffusing 'best practice' in multinational firms: Prospects, practice and contestation. *Int J Hum Resour Manag.* 1998;9(4):671-695.
doi: 10.1080/095851998340955
21. Patton M. Evaluation, knowledge management, best practices,

- and high quality lessons learned. *Am J Eval.* 2001;22(3):329-336.
doi: 10.1177/109821400102200307
22. Purcell J. Best practice and best fit: Chimera or cul-de-sac? *Hum Resour Manag J.* 1999;9(3):26-41.
doi: 10.1111/j.1748-8583.1999.tb00201.x
 23. Dolowitz D, Plugaru R, Saurugger S. The process of transfer: The micro-influences of power, time and learning. *Public Policy Adm.* 2020;35(4):445-464.
doi: 10.1177/0952076718822714
 24. Stone D. Understanding the transfer of policy failure: Bricolage, experimentalism and translation. *Policy Polit.* 2017;45(1):55-70.
doi: 10.1332/030557316X14748914098041
 25. Milhorance C, Howland F, Sabourin E, Le Coq J. Tackling the implementation gap in adaption strategies. *Clim Policy.* 2022;22(9-10):1113-1129.
doi: 10.1080/14693062.2022.2085650
 26. Mukhtarov F. Rethinking the travel of ideas: Policy translation in the water sector. *Policy Polit.* 2014;42(1):71-88.
doi: 10.1332/030557312X655459
 27. Müller M. (Im-)mobile policies: Why sustainability went wrong in the 2014 olympics in sochi. *Eur Urban Reg Stud.* 2015;22(2):191-209.
doi: 10.1177/0969776414523801
 28. Hustad O. From global goal to local development policy: How partnerships as a policy idea changes through policy translations. *Dev Policy Rev.* 2023;41(2):e12659.
doi: 10.1111/dpr.12659
 29. Sausman C, Osborn E, Barrett M. Policy translations through localisation: Implementing national policy in the UK. *Policy Polit.* 2016;44(4):563-589.
doi: 10.1332/030557315X14298807527143
 30. Peck J, Theodore N. Mobilizing policy: Models, methods, and mutations. *Geoforum.* 2010;41(2):169-174.
doi: 10.1016/j.geoforum.2010.01.002
 31. Prince R. Policy transfer as policy assemblage: Making policy for the creative industries in New Zealand. *Environ Plan A Econ Space.* 2010;42(1):169-186.
doi: 10.1068/a422
 32. Prince R. Policy transfer, consultants and the geographies of governance. *Prog Hum Geogr.* 2012;36(2):188-203.
doi: 10.1177/0309132511417659
 33. Stone D. Transfer and translation of policy. *Policy Stud.* 2012;33(4):483-499.
doi: 1080/01442872.2012.695933
 34. Wheeldon J. *Visual Criminology: From History and Methods to Critique and Policy Translations.* London: Routledge; 2021.
 35. Fritsch O, Benson D. Mutual learning and policy transfer in integrated water resources management: A research Agenda. *Water.* 2020;12(1):72.
doi: 10.3390/w12010072
 36. Nikolakis W, Roberts E. Wildfire governance in a changing world: Insights for policy learning and policy transfer. *Risk Hazard Cris Public Policy.* 2022;13(2):144-164.
doi: 10.1002/rhc3.12235
 37. Denzau AT, North DC. Shared mental models: Ideologies and institutions. *Kyklos.* 1994;47(1):3-31.
doi: 10.1111/j.1467-6435.1994.tb02246.x
 38. Brown G. What is involved in learning? In: Desforges C, editor. *An Introduction to Teaching: Psychological Perspectives.* England: Blackwell; 1995.
 39. John-Steiner V. *Notebooks of the Mind: Explorations of Thinking.* Oxford: Oxford University Press; 1997.
 40. Ministry of Water Resources of the People's Republic of China. *The Notification of Implementation Opinions on the Promotion of the River Chief System from 'in Name' to 'in Practice. (In Chinese).* Available from: <http://www.mwr.gov.cn/> [Last accessed on 2018 Oct 11].
 41. Stoecker R. Evaluating and rethinking the case study. *Soc Rev.* 1991;39:88-112.
doi: 10.1111/j.1467-954X.1991.tb02970.x
 42. Ministry of Water Resources of the People's Republic of China. *The Guide for 'One River (or Lake), One Document Programming. (In Chinese).* Available from: https://www.mwr.gov.cn/zwgk/zfxxgkml/201805/t20180514_1037385.html [Last accessed on 2018 Apr 13].
 43. Zhang Y, Marsh D. Learning by doing: The case of administrative policy transfer in China. *Policy Stud.* 2015;37(1):35-52.
doi: 10.1080/01442872.2015.1107959
 44. Nantong Municipal Government Office. *Opinions on Strengthening the River Chief System of River Management in the City (Internal Document);* 2023
 45. Wuxi Municipal Government Office. *Decision on Comprehensively Establishing the River Chief System and Comprehensively Strengthening the Comprehensive and Comprehensive Improvement and Management of River Courses. (Internal Office Documents):* N/A; 2008
 46. General Office of Jiangsu Provincial Government. *Notice on Strengthening the Work of River Chief System of River Management in Jiangsu Province: 11.* China: General Office of Jiangsu Provincial Government; 2012.
 47. Huzhou Municipal Government Office. *Implementation Plan of Establishing the River Chief System in Huzhou. (Internal Documents);* 2013.
 48. Huzhou Municipal Government Office. *Implementation*

- Opinions on Deepening the River Chief System.* (Internal Documents); 2014.
49. Huzhou Municipal Bureau of Water Affairs. *Huzhou Won the Title of National Advanced Collective for Comprehensively implementing the River Chief System and Lake Chief System.* Available from: <https://baijiahao.baidu.com/s?id=1690003733439938155&wfr=spider&for=pc> [Last accessed on 2021 Sep 30].
 50. He YL, Li N. Competition for innovation: A new local government competition mechanism. *J Wuhan Univ Philos Soc Sci Ed.* 2017;1:87-96.
 51. Huzhou Municipal Government. *Huzhou Water Ecological Environment Protection Fourteen-Fifth Plan.* Available from: <https://www.huzhou.gov.cn/hzgov/front/s1/xxgk/sswgh/sswzxxgh/ybzxgh/sthbl/20220315/i3140804.html> [Last accessed on 2022 Oct 27].
 52. Dolowitz D, Xiong Y. Policy transfer and the movement of Chinese river chief system. *Asian J Polit Sci.* 2024;32(2):138-156.
doi: 10.1080/02185377.2024.2363186
 53. Nantong Historical Records Network. Available from: <https://www.ntszw.gov.cn/?c=index&a=show&id=2460> [Last accessed on 2022 Mar 08].