**The Dynamic Process and Influencing Factors of Public Participation in Water Environment Governance in China**

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**ABSTRACT:** Sustained public participation is a vital means of promoting and ensuring effective water governance, an issue of increasing urgency and global implications. However, there is currently a lack of qualitative analysis exploring the processes and factors that influence the public’s continuous participation in water governance. Based on a long-term ethnographic study conducted from 2014 to 2019, this paper examines public engagement through Green Horizon (pseudonym), a water governance NGO in China. Through the use of in-depth interviews, participant observation, and questionnaires, we found that multiple factors determine whether the public continues to engage in water governance. Their participation follows a “life cycle,” initiated by environmental risk perception and emotional engagement, which are critical in driving voluntary public participation. Subsequent factors such as perceived political efficacy, organizational support, and family backing are pivotal for sustaining this public participation. We conclude that the intensification of governmental intervention and organizational transformation are the main reasons for the decline in public participation in water governance.

**KEYWORDS:** Public Participation, Water Governance, Sustainability, Dynamic Process, environmental NGO, China

1. **INTRODUCTION**

Water governance is recognized as an essential factor in achieving full and sustained progress towards Sustainable Development Goal 6, which aims to ensure the availability and sustainable management of water and sanitation for all, enhance water quality, increase water-use efficiency, implement integrated water resources management, and protect and restore water-related ecosystems (Jiménez et al., 2020). The “United Nations World Water Development Report 2020: Water and Climate Change” warns that global water insecurity is set to become one of the next decades’ most severe crises (UN, 2020). The “2023 United Nations World Water Development Report” also shows that global water consumption has grown at an annual rate of 1% over the last 40 years (UN, 2023). The urban population facing water shortages is expected to increase from 930 million in 2016 to between 1.7 and 2.4 billion by 2050 (UN, 2023). Effective water governance is a pressing global challenge that requires our immediate action.

China, the focus of our study, is a country with severe water scarcity. It had only one-fourth of the world’s average per capita water resources in 2017 (Xie, 2009). Over the past few decades, China’s relentless pursuit of economic growth has led to significant pollution of its water environments. Consequently, water environment governance has become a priority for the Chinese government. Initially, China’s environmental governance was characterized by a top-down strategy that was heavily reliant on state control. This strategy included measures such as incentivizing local officials, reducing price distortions, and direct investment in pollution control (Zheng and Kahn, 2017) as well as an enactment of comprehensive legislation, namely the Environmental Protection Law (《环境保护法》), the Law on the Prevention and Control of Atmospheric Pollution (《大气污染防治法》), and the Law on the Prevention and Control of Water Pollution (《水污染防治法》). These measures were introduced to steer local policy-making toward more sustainable practice and to curb corporate pollution through emission restrictions and tax incentives.

However, due to China’s vertical environmental management model (Ma, 2017), the successful implementation of policies and regulations set by the central government depends on the capabilities of local governments and the forcefulness of their enforcement. Since the current appraisal system rewards economic success, the enforcement of environmental laws and regulations faces significant obstacles. Environmental departments often find themselves operating within local governments that prioritize economic metrics, where immediate economic growth is favored at the expense of sustainable development (Liebehal, 1997). This often results in inadequate environmental governance and persistent, severe environmental degradation.

In light of this, existing scholarship on water governance in China primarily focuses on macro policy and its local implications, such as the government implementation of environmental taxes (Liu GQ et al., 2022), environmental subsidies (Sun HX et al., 2019), investments in pollution control (Zhao et al., 2022), and restrictions on corporate emissions (Yu et al., 2018). However, as a public good, water cannot be effectively governed by relying solely on the government and the market. It is imperative to leverage public participation in the governance process (Martens, 2006). While there is not a universal definition of public participation, it is generally considered to be a broad concept that encompasses diverse ways of engaging with individuals. This includes activities ranging from providing information and listening, to engaging in discussions, debates, and analyses, and even collaborating on agreed-upon solutions (Hügel and Davies, 2020). In the context of environmental governance, Wesselink et al. (2011) conceptualize public participation as the involvement of non-governmental actors in the formulation and implementation of official environmental governance. In this view, public participation refers to actions taken by individuals or groups in response to the threat of environmental pollution, using through complaints, petitions, or other pro-environmental actions.

In this paper, our definition of public participation is based on Wesselink et al.’s definition, while also incorporating insights from science and technology studies to enrich our understanding of its dynamic and co-produced nature. In a pathbreaking article, STS scholars Chilvers and Kearnes (2019) define public participation as diverse, relational, experimental, and continually evolving, rather than static and predefined. This perspective is particularly valuable for analyzing the dynamics and influencing factors of public participation in water environment governance in China, as it challenges traditional models that treat the public as pre-existing entities external to practices, advocating instead for a recognition of the public as co-constructed and procedural. By viewing public participation as a dynamic and interconnected process, we aim to identify deeper, more nuanced insights into the conditions and qualities that foster effective environmental governance. This approach allows us to go beyond mere policy impact and consider factors like reflexivity and experimentality, which are vital for sustainable and impactful public engagement with environmental issues.

Studies on water environment governance have consistently demonstrated the importance of public participation in promoting effective management (see Kochskämper et al., 2016 and Gao and Teets, 2021). For instance, M Sun et al. (2022) show that public participation effectively constrains corporate emission behaviors and encourages governments to enforce environmental regulations more strictly. Similarly, Ernst & Shamon (2020) argue that public participation enhances the scientific rigor and implementability of policies by incorporating the interests, concerns, and solutions of different social strata. In a case study on Kenya’s water supply system, Ananga (2017) and colleagues concluded that citizen or community participation is a cost-effective strategy for enhancing the quality of drinking water sanitation. Garcia et al. (2020) assert that public participation plays a crucial role in conserving and efficiently using water resources, reducing wastewater emissions, and restoring aquatic environments.

With regard to factors that might affect public involvement in environmental governance, much of the research to date has concentrated on the characteristics of individual actors that make up the “public,” the sociocultural context in which they are situated, and the larger “systems.” At the individual level, studies by Cao et al. (2020) and others have highlighted how demographic factors such as age, gender, education, occupation, environmental consciousness, and values shape people’s behavior and preferences toward engaging in environmental governance. Notably, Odonkor & Adom (2020) suggest a trend whereby older individuals exhibit a lower inclination to participate in such governance. Furthermore, Ge & Sheng (2020) also found that a higher degree of environmental awareness, including a sense of responsibility towards the environment, significantly increases the likelihood of individuals participating in environmental protection activities and contributing to environmental governance.

Undoubtedly, the sociocultural context surrounding individual participants or the broader public plays a critical role in determining the extent of public participation. Research by Khanal & Devkota (2020) indicates that individuals’ perceptions vary across different contexts, which in turn, influences their behavior towards environmental protection. Jia & Zhao (2020) have demonstrated that increased severity of environmental pollution intensifies people’s desire for environmental improvements, thereby enhancing their willingness to engage in governance activities. Moreover, a study by Shen et al. (2021) on the determinants of public involvement in urban water environment governance revealed that factors such as the frequency of visits and time spent in urban water environments, perceptions of these environments’ landscape and recreational value, and their overall ecological condition have a substantial impact on public participation levels in environmental governance.

Regarding the “system,” studies have identified factors like governmental attitudes, the efficacy of legal frameworks, and the availability of participatory channels as significant influencers of public involvement in environmental governance. Kahilatani et al. (2019) highlight how bureaucratic barriers within a flawed public administration system can jeopardize the process of public participation, effectively sidelining the community from the environmental governance process. Additionally, research conducted by H Liu et al. (2019) found that the more transparent the government is (what we mean by “governmental norms”), the greater the public’s willingness to participate in the River Chief system (河長制). This is because such transparency facilitates easier participation.

As demonstrated, while there is a substantial body of literature on public participation, the majority of these studies rely on static demographic and cross-sectional data, thereby overlooking the fact that the “public” is co-constructed (see Chilvers and Kearnes, 2019) and that environmental governance is a procedural and dynamic process. Exploration of the dynamics and factors influencing the public’s ongoing engagement with environmental governance over an extended period remains relatively understudied. We hope our long-term ethnographic study will bridge this gap, offering deeper insights into the importance of continuous public participation for achieving sustained success in managing water environments.

1. **METHODOLOGY AND ETHICS**
   1. **Methods**

Based in Hunan Province, China (Map 1), this case study provides a qualitative analysis of the motivations that drive volunteers to engage with water environment governance, the factors that encourage their continued involvement, and the reasons that contribute to a decline in their participation over an eight-year period (2014–2022). Using participant observation and semi-structured interviews as primary methods, in 2014, the first author began the research by engaging with several local, community-led environmental NGOs as a volunteer. This initial involvement fostered crucial connections with environmental organizations dedicated to river and lake conservation and laid the groundwork for subsequent research.

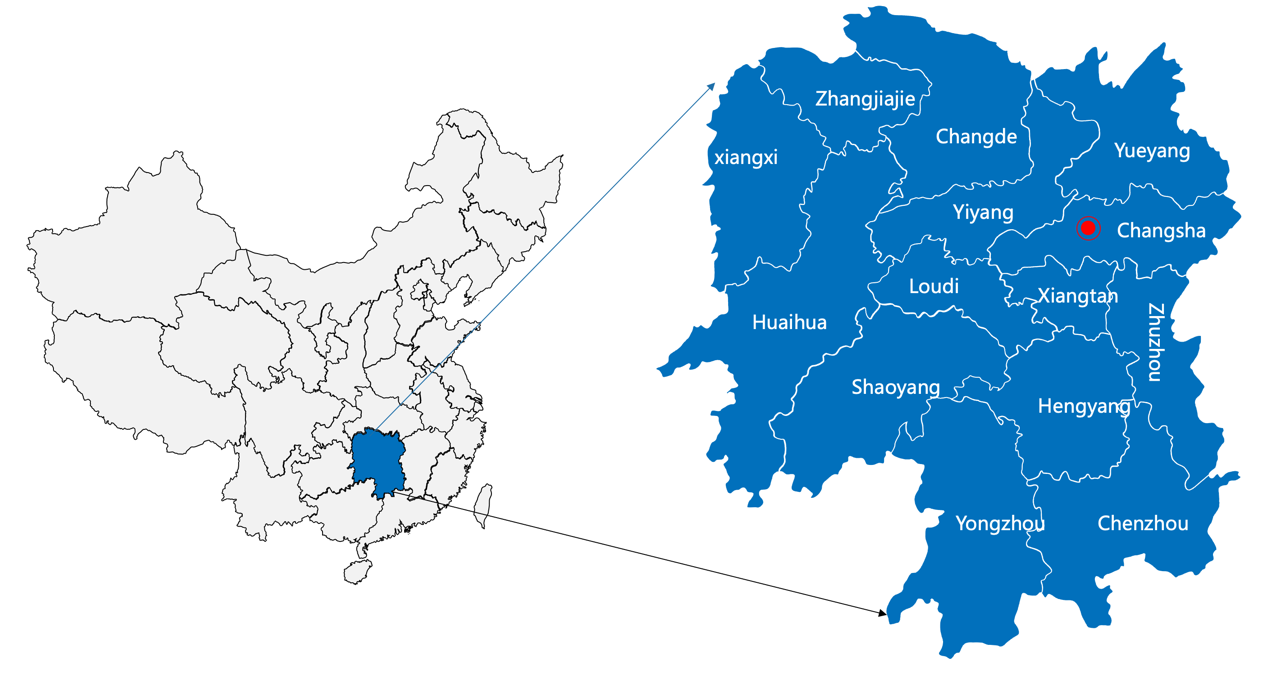
Between 2015 and February 2019, the study was expanded to include a broader pool of participants. Collaborating with Green Horizon, an environmental NGO, and our key organization informant for this study, the first author conducted in-depth semi-structured interviews with 30 environmental volunteers (see Table 1) from 14 different regions in Hunan Province. These 30 individuals had been actively involved in Green Horizon and other environmental organizations for a minimum of two years, participating in governance activities at least bi-monthly. The interviews were made possible through referrals from Green Horizon (22 interviewees) and additional snowball sampling (8 interviewees), with each participant being interviewed at least twice and each interview lasting a minimum of thirty minutes.

In addition, 16 interviews were carried out with six full-time NGO staff and four government officers, who played a pivotal role in the initiation and operation of water environment protection in this area. They provided invaluable insights into the organizational and operational aspects of environmental activism.

In 2016, the study further extended its scope by administering a questionnaire survey to 132 volunteers from Green Horizon. The survey sought to capture a wide array of personal lived experiences, beliefs about environmental conservation, motivations for environmental activism, and factors influencing their continued participation or withdrawal.

Finally, in 2022, the first author conducted follow-up semi-structured interviews and participant observation to investigate why some volunteers chose to disengage from water environment governance activities.

We hope that this longitudinal study offers insights into the motivations behind volunteer participation, the factors that promote sustained engagement, and the reasons for declining participation.



**Map 1: Hunan Province, our research study site.**

| **Code** | **Year of Participation** | **Status as of December 2022** |
| --- | --- | --- |
| PDJJ | 2013 | Continuously participating |
| DD | 2012 | Stopped participating in 2022 |
| LQQ | 2013 | Continuously participating |
| YFN | 2014 | Continuously participating |
| CK | 2014 | Stopped participating in July 2022 |
| WD | 2012 | Continuously participating |
| XTL | 2013 | Stopped participating in 2016 |
| YQQG | 2014 | Continuously participating |
| YQHG | 2014 | Stopped participating in September 2017 |
| MG | 2012 | Continuously participating |
| HW | 2012 | Stopped participating in October 2022 |
| ZZB | 2007 | Continuously participating |
| ZYH | 2012 | Continuously participating |
| DS | 2014 | Continuously participating |
| SY | 2013 | Stopped participating in July 2016 |
| WY | 2013 | Continuously participating |
| ZJ | 2014 | Stopped participating in 2020 |
| FY | 2013 | Stopped participating in 2017 |
| XWG | 2013 | Continuously participating |
| ZY | 2013 | Stopped participating in 2020 |
| TJX | 2014 | Stopped participating in October 2019 |
| TT | 2014 | Continuously participating |
| YQMG | 2013 | Stopped participating in 2016 |
| YLX | 2013 | Continuously participating |
| PA | 2013 | Stopped participating in November 2016 |
| DTH | 2014 | Continuously participating |
| DL | 2012 | Stopped participating in December 2016 |
| LQ | 2013 | Continuously participating |
| CD | 2013 | Stopped participating in 2018 |
| DR | 2012 | Stopped participating in 2017 |

**Table 1. Participation status of the 30 volunteers.**

* 1. **Fieldsites**

This research was primarily conducted with the staff and volunteers of Green Horizon, a civil organization operating in Hunan Province. Since its establishment in 2012, Green Horizon has dedicated itself to enhancing public involvement in local water governance. The organization was founded to address the shortcomings in government and market-driven approaches to water management, on the one hand, and in response to the Hunan Provincial Government’s call for increased societal participation in the stewardship of water environments, on the other. Although Hunan Province implemented a number of water governance policies as early as 1979 (Table 2), the execution has been challenged by an appraisal system that prioritizes economic growth. This system pressures city and county-level officials to focus on GDP and tangible “achievements,” often leading to the neglect of less tangible, soft indicators (Ran, 2013). As a result, local governments invariably prioritize economic development over environmental conservation. This has significantly impeded the execution of policies, exacerbating the pollution problems in the Xiang River.

Recognizing the limitations of both governmental and market-driven approaches to water management, the Hunan Provincial Government began to appeal to “the power of society” (社会的力量) to improve environmental governance of the Xiang River at municipal and county levels. In 2010, it launched the “Environmental Century March” campaign, aiming to engage various stakeholders including the government, municipal committees, the People’s Congress, the Water Resources Department, the Environmental Protection Department, media, and civil environmental protection organizations (Interview Record: 20180129LS). Green Horizon emerged as a pivotal player in response to the government’s call for public participation. By integrating community inputs with expert knowledge, Green Horizon not only strengthened local communities’ commitment to environmental stewardship but also established itself as a successful and exemplary model of public participation in water environment governance in China.

| Timeline | Government-Led Measures for Xiang River Management 措 |
| --- | --- |
| 1979 | The Hunan Provincial Government promulgated the first provincial-level water environment protection regulation in the country, the “Provisional Regulations for the Protection of the Xiang River System,” aimed at managing the water quality of the Xiang River. |
| 1988 | Hunan Province began to introduce foreign investment for the management of pollution in the Xiang River. |
| 1998 | The “Hunan Province Xiang River Basin Water Pollution Prevention and Control Regulations” were issued. |
| 2000 | To address industrial pollution discharge issues, the Hunan Provincial Government launched the “Zero Point Action.” |
| 2007 | The Hunan Provincial Government issued the “11th Five-Year Plan for Cadmium Pollution Prevention and Control in the Xiang River Basin.” |
| 2008 | Hunan Province set the long-term goal of creating the “Oriental Rhine” and issued an implementation plan for the comprehensive management of the Xiang River Basin. A 3-year plan was set with an investment of 17.4 billion yuan to focus on addressing the water pollution problem of the Xiang River. |
| 2009 | The Ministry of Environmental Protection and the Hunan Provincial Government signed the “Cooperative Framework Agreement on Jointly Promoting the Construction of a Two-Oriented Society in the Chang-Zhu-Tan City Cluster,” including the remediation of heavy metal pollution in the Xiang River Basin as an important part of the cooperation between the ministry and the province; in the same year, the “Key Technology Research and Comprehensive Demonstration Implementation Plan for the Remediation of Heavy Metal Pollution in the Xiang River Water Environment” was included in the “National Key Special Project for Water Pollution Control and Management.” |
| 2011 | The State Council approved the “Implementation Plan for Heavy Metal Pollution Remediation in the Xiang River Basin” with an investment of 59.5 billion yuan. |
| 2012  2013  2015  2016  2019 | The General Office of the Hunan Provincial Government issued the “Work Plan for the ‘Implementation Plan for Heavy Metal Management in the Xiang River Basin’” with the aim of optimizing the heavy metal industry structure and controlling industrial pollution sources. The plan aimed to reduce the number and emissions of enterprises involved in heavy metals to 50% of their 2008 levels by the end of the “Twelfth Five-Year Plan.” In the same year, the Hunan Provincial Government and the governments of cities and states along the Xiang River signed target responsibility statements, stipulating that if pollution control tasks were not completed, local governments and chief executives would be subject to a “veto” in their assessments.  The “Hunan Province Xiang River Protection Regulations” were officially implemented; Xiang River protection was listed as the province’s “Number One Key Project,” following the overall philosophy of “no large-scale development, joint protection, restoration of major ecology, and enhancement of major cooperation,” with the rolling out of three “Three-Year Action Plans.”  The Xiang River Basin “River Chief System” Implementation Plan  The second “Three-Year Action Plan” for Xiang River Protection and Management  The third “Three-Year Action Plan” for Xiang River Protection and Management. |

**Table 2 Summary of Government-Led Measures for Xiang River Management from 1979 to 2020**

* 1. **Ethics and Anonymity**

Civil society and environmental issues can be sensitive topics in China. With this in mind, we have thoughtfully assessed how our research might impact the participants in this water network. To maintain confidentiality, we have anonymized the identities of all individuals and organizations involved. However, achieving complete anonymity is challenging, given that we have identified the province where they are located. To the best of our ability, we have diligently ensured that the insights and arguments in this study do not negatively impact the subjects mentioned.

1. **RESULTS AND DISCUSSIONS**

In this section, we discuss the complex motivations and factors driving and sustaining long-term public participation in water environment governance in Hunan Province, China. Contrary to recent studies that highlight the resignation (Lora-Wainwright, 2021) or inaction (Lou, 2022) of the Chinese public, our study reveals that environmental risk perception and an individual’s emotional attachment to their native places and natural surroundings are crucial drivers for certain public actions, suggesting that there is a link between environmental awareness and what Peter Ho (2007: PAGE) describes as “embedded activism.” Following this, we discuss the sustaining factors of long-term public participation—namely, political efficacy, organizational involvement, and family support—and how they interact symbiotically. We present detailed narratives from our interviewees to support these arguments, underscoring that public participation in water environment governance in China is a procedural and dynamic process.

**3.1 Drivers of Public Participation: Environmental Risk Perception and Emotional Attachments**

For the purpose of this study, we adopt the definition of “environmental risk perception” as the intuitive ability of individuals or groups to evaluate environmental hazards in situations characterized by limited and uncertain information (Paul, 2016). Such risk perception is not purely analytical but blends logical reasoning with emotional responses, particularly the fear associated with potential risks (Sjöberg, 2007). Research into participation in environmental governance reveals that the “Not in My Backyard” (NIMBY) movements prevalent in much of China are largely driven by the public’s perception of environmental dangers (see Hongyan, 2016 and Wong, 2016). Our research further indicates that the public’s eagerness to engage in initiatives related to water environment management stems from their awareness and concern over the threats posed by water pollution. This is underscored by the insight shared by one of our interviewees:

I participated because Green Horizon took us to see the sewage outlet of the X River. Before that, I didn’t even know there was such a thing as a “sewage outlet.” Later, when they showed us the sewage outlet, my goodness, I was shocked to see the water being directly discharged into the Xiang River—the same water we drink. This was alarming, and I felt that monitoring this was a way to protect ourselves, which was quite meaningful. (Interview Record: 20160217PDJJ)

I live right next to the Xiang River. In 2012, when I was fishing at ZPU Port, I discovered that there was a sewage outlet near my home discharging red wastewater. I was instantly scared. How could there be red water? Driven by fear, I started to take photos of the pollution and sent them to the governor’s mailbox to push for a solution to the problem. (Interview Record: 20160217DD)

However, our research reveals that the perception of environmental risk is just one of several factors influencing public engagement in local water environment governance. Equally critical is the public’s emotional bond and sense of connection to their hometowns or natural surroundings. As an activity coordinator of Green Horizon remarked, “We were able to mobilize the public to monitor the water environment because we made them aware of water pollution not only cognitively but also emotionally” (Research Diary: 20160816).

Human geographer Yi-Fu Tuan (2018) coined the term “topophilia” to describe the intricate and profound emotional connections that individuals form with their physical surroundings. Tuan defines “topophilia” as the affective bond between people and place, which goes beyond mere aesthetic appreciation to include deeper feelings of attachment and belonging. This connection can manifest in various ways, from a person’s fondness for the natural features of their homeland, such as flora and terrain, to a sentimental attachment to specific landscapes, like rivers or mountains that hold personal or cultural significance. This bond significantly influences behaviors and perceptions, motivating individuals to engage in and promote environmental stewardship. Particularly, it drives people to protect and preserve the water bodies of their native regions, which they often see as integral parts of their identity and heritage. Tuan’s insights (1990) help explain why environmental initiatives often receive strong local support; they tap into the deep-seated topophilia that inspires communities to care for and sustain their natural environments.

Further supporting this idea, Ajiang Chen’s study (2020) discovered that some residents had engaged in environmental conservation efforts regardless of personal economic gain or loss. This was driven by a deep-seated emotional connection to their hometowns.

Our findings align with these insights, showing that the public’s emotional ties to their local environment greatly motivate their involvement in initiatives aimed at water environment governance. For example, in our 2016 survey of the 132 volunteers from Green Horizon, a staggering 89.6% of respondents attributed their participation to their emotional attachment to their hometown environment and a strong desire to aid in its recovery. As two of our informants said:

As a native of Xiangtan, I grew up by the Xiang River and have deep feelings for it. When I saw the environment of the Xiang River deteriorating, I missed the river of my childhood, the river where I used to swim and play. I wanted the Xiang River to return to its former state, so I decided to take action. (Interview Record: 20160217HW)

I am from Hunan Province. Protecting Hunan’s environment and working for a better Hunan is my responsibility. Wherever there is pollution, I will be there. As long as I live, the environmental protection efforts will not cease. I will not stop until the rivers are clean. (Interview Record: 20190811ZZB)

As we explore the initial drivers of public participation, it becomes evident that both environmental risk perception and emotional attachments play significant roles. Moving forward, we will examine the factors that sustain this engagement over the long term, including political efficacy, organizational involvement, and family support, all of which contribute to an enduring commitment to environmental governance.

**3.2 Factors Sustaining Long-Term Public Participation**

How can we sustain the public’s involvement in water environment management? In this section, we examine the symbiotic relationship between political efficacy, organizational backing, and family support, and their connection to public participation in water environment governance. We posit that these factors do not operate in isolation but are part of a mutually reinforcing relationship, as depicted in Figure 1. We argue that an effective organization is critical for public mobilization and for earning the Chinese government’s trust, which, in turn, enhances participants’ sense of political efficacy. This increased sense of efficacy further stimulates further organizational development, setting the stage for bolder actions. Last but not least, family support fortifies the resilience and sustainability of public participation. This synergy results in a self-strengthening cycle that is vital for the endurance of public engagement.

Essentially, political efficacy serves as an accelerant, sparking continued participation, while family backing and a robust organizational structure provide the necessary support—akin to oxygen—that keeps the fire of civic involvement burning (Figure 2).

A diagram of a family support

Description automatically generated

**Figure 1: The symbiosis of political efficacy, organizational support, and family backing**

*3.2.1 Political Efficacy*

One of the primary motivators for people to continue engaging in water conservation efforts in China is their confidence in their ability to influence political outcomes—what political scientists call “political efficacy.” Political efficacy refers to an individual’s perception that they have the power to influence political processes and that the government responds to citizen input. It encompasses feelings of personal competence in understanding politics and the perception that political participation can bring about change. The term “political efficacy” was popularized by researchers Angus Campbell, Gerald Gurin, and Warren E. Miller in their seminal work *The Voter Decides*, published in 1954. Their studies, particularly those related to American electoral behavior, helped bring attention to this concept in political science. This concept encompasses two dimensions: internal political efficacy and external political efficacy (see Acock and Clarke, 1990, and Aish and Jöreskog, 1990). Internal political efficacy refers to individuals’ confidence in their own ability to understand and impact politics, whereas external political efficacy focuses on the trust in the political system to heed and incorporate public suggestions. Case studies in China confirm that both internal and external political efficacy have a positive effect on public deliberation involvement (see Pei et al., 2018 and Wei and Zhao, 2017). Clearly, the two are intertwined, but Pei et al. found that internal efficacy’s impact is more indirect and is often mediated by external political efficacy. Thus, we argue that our informants were motivated to participate because they saw an opportunity to foster a collaborative relationship with the government. This, in turn, can lead to local governmental bodies addressing environmental issues more effectively. The testimonies below illustrate this dynamic well:

**Interviewee 1:** “The reason I’m willing to keep doing this is that Green Horizon took us to visit the Environmental Protection Bureau a few times. The head of the bureau was very polite to us. We even exchanged contacts. This is something I couldn’t have experienced as an ordinary citizen before. The issues we report were also resolved quickly.” (Interview Record: 20180821YFN)

**Interviewee 2:** “Through participating in water environment governance, we have established a cooperative relationship with the government. Every time I report something to them, they respond quickly. It gives me a sense of privilege, like I was actually an officer (这种感觉给了我一种当官的感觉).” (Interview Record: 20180813CK)

**Interviewee 3:** “I enjoy participating in environmental protection actions. It’s our right as well as our responsibility. I even obtained the honor of a ‘Green Guardian’ (绿色卫士). In Hunan Province, only a few hundred people have become Green Guardians. The Green Guardian certificate is also useful. When we go to conduct research, local governments and enterprises take us more seriously if we have the certificates. We are able to push for changes sometimes.” (Interview Record: 20180812LQ)

It is undeniable that the sense of political efficacy generated from participation is an important motivating factor for the public to continue engaging in and carrying out actions for water environment governance. However, whether the public can obtain a sense of political efficacy during these actions is significantly related to whether they can gain the trust of local governments and, subsequently, form cooperative relationships with them. In our research with relevant local government departments, government officials consistently reiterated that one of the prerequisites for establishing a cooperative relationship between the government and the public is that the government’s partners must be formal organizations, rather than individual actors. This is not only because formal organizations are more professional, but also because they are more controllable. This echoes Wu et al.’s research (2020) on the forms of environmental governance and regional environmental quality. Drawing on data from 30 provinces in China, they found that isolated individuals cannot effectively participate in environmental governance because the activity demands certain awareness and skills that most members of the public lack, resulting in a low sense of political efficacy. Compared with individual citizen participation, volunteers participating through environmental NGOs have generated a more significant positive effect on regional environmental quality (REQ) improvement, resulting in a higher sense of political efficacy.

*3.2.2. Working as a Team in an Environmental Organization*

Building on the findings about the importance of formal organization for effective public participation and political efficacy, we explored further how being part of a structured team within an environmental organization enhances the commitment of its members. When we asked our informants why they were willing to persistently carry out water environment governance in their local areas, many expressed that it was due to becoming “part of the team” within the organization. Over time, this involvement fostered a strong sense of belonging to the environmental organization, provided continuous support, and offered opportunities for learning and personal growth. As our interviewees explained:

We have a group of people working on this. Together with Brother Wu, we established an “Environmental Rapid Response Center.” Even if there are difficulties, I know I’m not alone. We support each other. We do this together. (Interview Record: 20181208PDJJ)

We keep participating in local water environment governance because we’re part of Green Horizon. Being part of this group empowers us and provides the resources we need to do our work effectively. (Interview Record: 20180711YQQG)

We are able to persist in the long term because we formed an environmental protection brigade. Our relationship now is like that of brothers and sisters. We encourage and motivate each other to carry out environmental protection actions together. (Research Diary: 20160812)

As we can see, whether the public is organized is an important factor affecting whether they will continue to participate in water governance. This finding echoes what Zhang (2016) found. In her analysis of the environmental movement against waste incineration, Zhang Jieying (2016: PAGE) found that this environmental movement was able to transform from a struggle for the “private interests of biocitizens” to a social action aimed at “environmental protection” and “public welfare” because the movement has become organized, eventually forming an environmental organization.

*3.2.3. Family Support*

Last but not least, our study identifies family support as a crucial factor in sustaining an individual’s long-term engagement with water environment governance. Participating in environmental governance actions often poses political risks in China, as it may conflict with the interests of businesses or local authorities. Such commitment also requires a considerable investment of time and energy as well as financial stability, as volunteering typically necessitates having free time at one’s disposal. These commitments can affect not just the individual volunteer but their entire family’s welfare. Therefore, the support of family members becomes essential for participants to continue their contributions to local environmental governance. This is vividly voiced by our interviewees, who underscore the importance of familial support in their decisions to continue their involvement.

Participating in water environment governance is both costly and risky. My wife once asked me to stop participating, and I considered stopping at that time because family is more important compared to participating in water environment governance. However, after involving her in several actions, I finally got her support, and it was this support that allowed me to persist. (Conversation notes from research diary)

The main reason I am willing and able to continue promoting water environmental governance is because my family supports me. My wife and children think it’s a very meaningful thing to do, and they are willing to share some of my responsibilities and obligations in the family. (Interview Record: 20200811YLX)

In short, the role of family support in sustaining environmental governance efforts is indispensable. As our research indicates, when family members understand and share the vision of the environmental initiatives, they not only provide the emotional backing needed to endure challenges but also contribute practically by sharing family responsibilities. This familial solidarity is often the backbone that enables persistent and effective participation in environmental governance.

* 1. **Decline in Public Participation**

In the preceding sections, we explored the drivers and sustainers of public participation in water environment governance. This section will examine how these drivers might falter due to external pressures. Despite ongoing engagement by some individuals, there has been a noticeable decline in participation among individuals affiliated with environmental organizations. This decline is linked to improved local environmental conditions, which are a result of robust government-led initiatives, as well as the structural changes within environmental organizations in response to the government’s top-down approaches.

Take the “River Chief system” (河长制) as an example. In recent years, environmental protection and sustainable development have ascended to the top of the Chinese government’s agenda. As environmental concerns become central to national policy and are increasingly integrated into state governance, the government has not only increased its investment in environmental management but also heightened political pressure and accountability from the top down. The River Chief system (RCS, 河长制) exemplifies this top-down approach, aimed at improving water pollution control and ensuring water security.

Initiated in 2007, the nationwide system appoints local party and government leaders at various levels as “River Chiefs” (河长) to organize and lead the management and protection of local rivers and lakes. These official River Chiefs play a critical role in integrating various administrative and departmental resources for water governance. By the end of June 2018, all 31 provinces (autonomous regions, municipalities directly under the Central Government) had fully established the River Chief system, specifying River Chiefs at the provincial, city, county, and township levels. Under the River Chief system, River Chiefs at all levels need to regularly patrol rivers, consolidate responsibilities for rivers and lakes, complete health assessments of rivers, lakes, and reservoirs, formulate protection strategies, and ensure the updating and management of River Chief signs.

However, many official River Chiefs find it challenging to manage all their responsibilities alone due to the significant demands on their time, energy, and personnel. To address this, they initiated the “Civilian River Chief” (民间河长) program, delegating the specific task of river-patrolling to the public. These Civilian River Chiefs are non-official community members who bring a more flexible and localized approach to water resource management. Originally introduced in Zhejiang Province, the concept has since been adopted by various provinces across China, each tailoring it to their regional needs (Wu, 2020).

So is the River Chief system effective? Existing studies show that the effectiveness of the River Chief system varies. For instance, some studies have found that the RCS has proven to be an effective tool for improving the water quality of various river basins in China (see Zhang et al., 2022 and Li W et al.,2021). More commonly, as exemplified by the case study in Foshan, Guangdong Province, researchers found that, while the RCS has considerably improved water quality management through enhanced coordination and accountability, its success is not uniformly guaranteed (Liu H et al., 2019). Often, the system’s effectiveness depends on the level of engagement from Civilian River Chiefs and the economic pressures facing local governments (see Li Y et al., 2020 and Liu H et al., 2019). In the worst-case scenario, the RCS can devolve into a form of “cosmetic pollution governance” (see Jing et al., 2020: PAGES).

In our fieldsite, Hunan Province, studies have shown that the River Chief system is effective in improving the water quality of the Xiangjiang River Basin. Paradoxically, this positive effect does not extend to public participation. Our research found that public involvement actually declined under the River Chief system. There are several reasons for this.

First, the mobilization and encouragement of public participation under the River Chief system are primarily carried out through government procurement of services. In the Chinese context, government procurement of services refers to the practice whereby the government outsources certain public services to qualified social organizations. These services, which the government would typically handle directly, are instead provided by these organizations through a bidding and contract process. The government then pays these organizations for their services.

Although the public is officially mobilized under the River Chief system, their power is suspended and marginalized because they must work within the framework of government procurement of services. As Hong and Tyson point out (CITE), when public participation takes the form of a service to the government, it diminishes their sense of political efficacy. This is similar to concerns raised by Ma Jun (CITE) in his research on China’s Vertical Environmental Management, where centralization reduces the effectiveness of local oversight and diminishes the involvement of local governments and the public in environmental management.

As our interviewees told us, when members of the public assumed the role of Civilian River Chiefs, it became difficult for them to exercise true and meaningful bottom-up supervision within this centralized framework. This is because water environment management becomes a political issue that affects the performance evaluations of government officials, making Civilian River Chiefs hesitate to speak up and take action. If Civilian River Chiefs or social organizations carry out water environment protection actions in a way that makes the government feel they are out of control, local governments will stop funding these social organizations.

Less discussed, but equally important, is that many members of the public are willing to participate in water environment protection actions long-term because they enjoy working within the environmental organization and being the government’s watchdog (Luo et al., DATE). This inevitably causes resentment from local governments and poses risks to both individuals and social organizations.

One interviewee noted, “The relationship between GH and us isn’t as close anymore. The environment has improved, and the government is taking it more seriously now. I don’t feel my participation matters as much as before” (Research Diary: 20200723).

Another interviewee expressed similar sentiments, stating, “The organization we volunteered for has changed its leadership and approach. It is now mainly working for the government. There’s no independence left, and there’s no point in volunteering with them now” (Research Diary: 20200723).

As a result, in the realm of water environment management, social organizations often shift from actions of environmental supervision to non-confrontational activities like environmental education and public empowerment. In other words, social organizations in China can only operate as “assistants” in environmental governance. If they deviate from this role and adopt a more adversarial stance, they risk suppression (Research Diary: 20200722).

1. **Conclusion**

Persistent public participation is vital for the efficacy of water environment governance. Our study found that public participation in water environment governance follows a dynamic life cycle. Using the metaphor of a wood fire, our first author created an illustration (Figures 3, 4, and 5) to visualize the dynamic process of public participation in water environmental governance in China.

A drawing of a fire and a match

Description automatically generated

Figure 3: Firewood represents environmental issues/risks. The ignition stick represents emotional drive.

A drawing of a campfire and a can of oil

Description automatically generated

Figure 4: Political efficacy is an accelerant. Family support is like oxygen that sustains the burn.

A drawing of a campfire

Description automatically generated

Figure 5: As government environmental governance efficiency improves and explicit environmental risks are gradually eliminated, this is like removing the firewood from under the pot, while organizational changes are like a bucket of water that extinguishes the fire.

Public involvement is sparked by the recognition of environmental risks and the emotional stirrings of place attachment, much like a flame kindled in a fire. Political efficacy, organizational support, and family backing are the fundamental fuels that sustain the blaze of continuous engagement and action in environmental governance.

Environmental risks serve as the firewood underpinning China’s public engagement, providing the substantive base for action. Emotions are the sparks that ignite participation. Together, they establish the starting point for public involvement. Political efficacy functions as an accelerant, energizing participation and enabling the fire of involvement to burn more vigorously. Organizational and family support act as the oxygen, essential for maintaining the flame of public participation.

However, as government control strengthens and environmental risks recede, the underlying impetus for public participation dwindles, akin to the removal of some firewood from a flame. Organizational changes can also dampen the urge for participation, as if dousing the fire with water, leading to its gradual extinguishment.

Existing research indicates that forming a stable, diverse participation platform and institutionalizing public participation are crucial preconditions for sustained involvement (Grano 2016). Our empirical data also show that those who continue to participate in water environment governance have typically established a stable platform with the local government. This includes formulating norms to guarantee public participation, making the public genuine stakeholders embedded in the local water environment governance system, and becoming indispensable in local water governance actions.

However, when the government’s power in environmental governance extends to the grassroots level and employs top-down social mobilization through government procurement of services, replacing bottom-up mobilization initiated by social organizations, it weakens the public’s sense of efficacy in participating through environmental supervision. This, in turn, reduces the sense of fulfillment gained from public participation.

Therefore, maintaining enthusiasm for continuous involvement and maximizing the effectiveness of public participation requires balancing the relationship between the government and the public within the environmental governance system. This necessitates addressing the role governments should play in the environmental governance system and how they can effectively take on a leading role in an authoritarian state like China. Giddens (2009: PAGE) proposed the strategy of the “ensuring state” in response to global issues like climate change, suggesting that the ensuring state should act as a “catalyst” and “coordinator” in environmental governance, making long-term plans, mobilizing efforts, and ensuring the implementation of plans. This means that, in the process of environmental governance, the government should not replace social groups and citizens in all environmental matters through a top-down approach, which would strip them of their responsibilities and reduce social vitality. Instead, the government should coordinate various interests, integrate resources, and leave space for public participation to ensure the effective implementation of environmental governance actions.

Maintaining continuous public participation in environmental governance is a complex and dynamic process requiring a careful balance between government authority and public involvement. This study bridges the gap in understanding why the public continues to participate in water environment governance by constructing the life cycle of public participation and withdrawal. However, since our sample is primarily from one province of China, it may not fully represent participation across all regions and cultural backgrounds. Additionally, while we explore the reasons for public participation, continuous involvement, and withdrawal, we do not address the extent and quality of participation. What is clear, though, is that by fostering a collaborative environment where both the government and the public can effectively engage, the sustainability and effectiveness of environmental governance efforts will be enhanced.

1. This article is based on fieldwork conducted by the first author. During the writing stage, the first author wrote the first draft in Chinese. The second author translated the first draft and revised the content collaboratively with the first author. [↑](#footnote-ref-1)