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Frontline governmental cooperation in environmental governance: A case analysis on the ecological demonstration zone in China

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This study investigates the establishment of the Yangtze River Delta Eco-Green Integrated Development Demonstration Zone (also known as Ecological Demonstration Zone). During the inspection and acceptance process of the higher-level government, the authors identified two distinct types of government cooperation between frontline environmental policy implementers and middle-level government, as well as the public. The new interaction emphasizes cooperation between implementers and the public, while the traditional interaction involves collaboration between implementers and the government. This research aims to comprehend the underlying reasons for the shift in the targeted interaction of frontline government in environmental governance. The study uses fuzzy-set qualitative comparative analysis to explore the cooperation dynamics in the implementation of environmental policies and to uncover that the power to promote the interaction of frontline governments in environmental governance comes from institutional change factors such as fuzzy task models and qualitative on-site inspections and acceptances by higher-level governments.

KEYWORDS

environmental governance, ecological demonstration zone, government cooperation, qualitative comparative analysis, frontline policy

1 Introduction

In contemporary China, the implementation of frontline environmental policies presents a prominent phenomenon. Specifically, with respect to the construction of ecological development demonstration zones, frontline policy implementers frequently resort to informal methods when executing various environmental policy directives from higher-level government departments within the vertical system. The subsequent inspection and acceptance of the construction of the ecological development demonstration zone by the higher authorities eventually caused the policy implementation process to deviate from the actual result. A common trend observed is the cooperation between upper and lower government entities in response to higher-level government assessments. Relevant research on this topic has become a crucial concept in the discourse and investigation of contemporary Chinese environmental policy (Liu and Diamond, 2005; Gilley, 2012; Ran, 2013; Huang et al., 2014). This organizational phenomenon is summarized as follows: in the

face of implementation issues related to environmental policies, frontline policy implementers lobby the middle-level government (often the county-level government immediately superior to the frontline government) to conceal and safeguard it, or the directly superior government mandates frontline environmental policy implementation. In view of this, Zhou (2010) defined it as an “upward cooperation” among frontline environmental policy implementers. For example, a town government in charge of agricultural work in Q City, Province Z said:

“For us, the most challenging job in the construction of township ecological demonstration zones is ‘ecological restoration.’ This job is difficult to do, but the materials we submitted must not be unsightly. The county has also informed us in advance. In the materials, we will focus on introducing some other aspects of landscape improvement results and highlight other aspects of performance. The county should summarize the performance of landscape improvement, average the data of each town, and then report it, so that advantages of our work can cover the shortcomings (interview transcript: H20201203).”

In the implementation of environmental policies, “upward cooperation” is not a necessarily pejorative. The interactive game between frontline environmental policy implementers and middle-level governments outside the formal system provides a specific institutional space for environmental innovation behavior. However, those “upward cooperation” in the negative sense such as “concealment” and “false reporting”, are undesirable from the higher-level government’s perspective, and they present unique challenges that are complex, wide-ranging, open, and operationally resilient. For example, for the construction of ecological demonstration zones in environmental governance, government behaviors such as cooperative planning and hidden agendas in “upward cooperation.” As a result, a relationship between frontline environmental policy implementers and middle-level governments based on political performance benefits has formed a “sheltered groups” (Schreurs, 2017) within the environment for implementing environmental policies in China.

In this case, the frontline environmental policy implementers did not cooperate with the middle-level government, but collaborated with local villagers to respond to the inspection of the higher-level government regarding the construction of the ecological demonstration zone. Social attitude is a crucial criterion for evaluating the implementation effectiveness of environmental policies, and thus should not be regarded as a coping strategy. However, these behaviors were widespread in the case townships and exhibited distinct features: First, the inspection and acceptance by the higher-level government compelled passively coping by frontline environmental policy implementers; Second, the resources supporting environmental policies were not entirely allocated to specific projects (in this case, environmental special funds), but were transferred to the implementation of other policies; third, the change in social attitudes towards the implementation of environmental policies was not a result of target policy implementation, but was caused by the economic benefits brought about by the implementation of another policy. To explain this set of problems, the authors interviewed a person in

charge of the Agricultural and Rural Work Office of D Town Government, H City, Z Province, who talked about a “new model” of cooperation:

“As far as the construction of the ecological demonstration zone is concerned, the higher-level government (province) is now stricter than before. In our town, the Construction of the Beautiful Countryside is the focus of the rural revitalization work, and the improvement of the rural environment is the focus of the Construction of the Beautiful Countryside. We generally mobilize the village to pay the “sanitary fee”, and the town subsidizes the special project for the construction of an ecological demonstration zone. Let the villagers divide the work to clean key areas, send one person from each household to participate, and participate in the morning or afternoon to pay a 100 yuan labor fee and 40 yuan lost work fee. Over the years, the provincial inspection team has praised the work of our town. Even if the inspection leaders randomly ask the villagers on the roadside, the villagers who have received “benefits” will speak up for the town. Under this change, we often invite some villagers to participate in the inspection meeting (on-site inspection by the superior assessment team), and their dialogue and interaction with the leaders also strengthen the “credibility” of our work performance (interview transcript: A20210619C).”

Most importantly, as the vertical government governance system is reformed, and with the attention competition of frontline environmental policy implementers shifting to “Beautiful Countryside Construction,” they aimed to cooperate with the local public, focusing on agenda setting, performances, exhibitions, discourse symbols, and enhancing their performance when the superior government inspects, thus creating a performative coping strategy. These coping behaviors, similar to “upward cooperation,” do not align with or even contradict the goals of higher-level policy tasks and are operated through informal systems. Therefore, this study uses the concept of “downward cooperation” to summarize this collusive behavior of environmental policy implementers at the frontline level. Table 1 below compares the organizational characteristics of the two government cooperation behaviors, “upward cooperation,” and “downward cooperation.”

Compared with the “upward cooperation”, the actors in “downward cooperation” have shifted positions in the vertical hierarchy, whereby the interaction between frontline environmental policy implementers and the middle-level government has transformed into cooperation with local communities. While “downward cooperation” remains a response to superior inspections, this change highlights the adaptability and flexibility of frontline environmental policy implementers in environmental governance, and underscores the value-neutral capacity of integrating society into the implementation process of environmental policies through informal institutions. This organizational phenomenon has prompted the author to pose several questions: Why have frontline environmental policy implementers shifted their cooperation from the higher-level government to the public in the construction of the ecological demonstration zone, and why have they opted to use “downward cooperation” rather than “upward cooperation” to deal with higher-

TABLE 1 Comparison of organizational characteristics between “upward cooperation” and “downward cooperation”.

Cooperation behaviors	“Upward cooperation”	“Downward cooperation”
Mover	Frontline environmental policy executor	Frontline environmental policy executor
Partner	Middle-level government (Directly superior government)	The people
Coping object	Higher-level government	Higher-level government
Acceptance form	Quantitative indicators assessment	Qualitative field assessment
Cooperation from	“Concealment”	Agenda setting
	“False report”	Performance
	“Liarly”	Speech expression

level inspection and acceptance? Furthermore, how should we deepen our understanding of social groups included in environmental governance?.

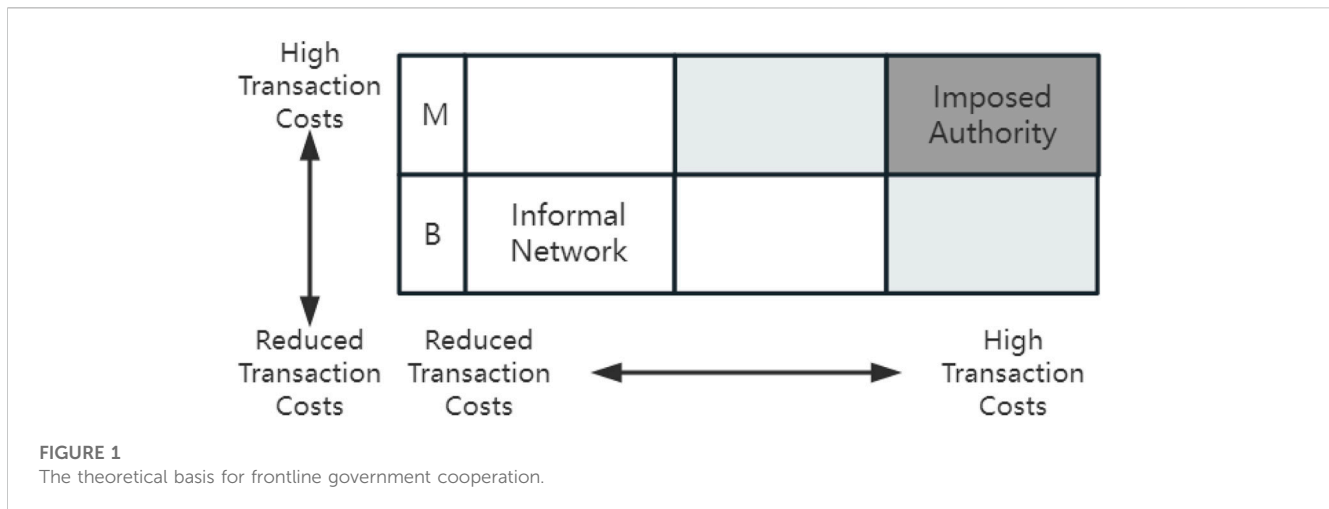
2 Literature review: Government cooperation and environmental governance

Ecological environment fits the definition of a common-pool resource, a resource that is shared by a group of individuals or communities and that is prone to depletion or degradation through overuse or lack of management (Young, 2002; Dietz et al., 2003). In recent years, a large number of studies have pointed out that the lack of scientific Management can lead to degradation and deterioration of the ecological environment (Sadik-Zada and Ferrari, 2020; Sadik-Zada et al., 2019; D’Agostino, 2015). Effective governance of the ecological environment is essential to ensure its sustainable use and protection (Bergin et al., 2005). Environmental governance is a complex and multidimensional issue that requires cooperation among different levels of government and the public. Environmental policies depend on the collaboration of higher-level governments, frontline governments, and the public (Liu and Diamond, 2005; Huang et al., 2014). At the same time, government collaboration approaches are increasingly being used to address transboundary environmental problems around the world (Koontz and Newig, 2014; Hileman and Bodin, 2019).

Ecological environment protection is a complex and challenging issue that requires institutional cross-boundary collective action. Water and soil pollution can easily cross administrative boundaries, making it difficult for a single government entity to effectively address environmental challenges (Gulati et al., 2012). One of the central questions that scholars have addressed is what factors facilitate or hinder institutional collective action. Some studies have identified trust, social capital, and common interests as important determinants of successful collective action (Ostrom, 1990; Putnam, 1993; Brehm and Gates, 1999). Other factors, such as power dynamics, group size, and resource availability, have also been found to play a role in shaping collective action outcomes (Hardin, 1982; Agranoff and McGuire, 2003). Another important theme in the literature is the relationship between institutional collective action and governance. Some scholars argue that collective action can improve governance by

enhancing accountability, legitimacy, and responsiveness (Ansell and Gash, 2008; Yi et al., 2018). Others suggest that collective action can challenge existing power structures and produce unintended consequences, such as exclusionary or elitist outcomes (Edelman, 1990; Soss and Schram, 2007). The most well-known studies on ICA belong to Richard Clark Feiock. Feiock (2013) believes that the formation and maintenance of specific collaborative governance behaviors among governments result from comprehensive consideration of the benefits and costs for each local government. When the benefits of collaborative governance are greater than transaction costs, local governments have the motivation to choose and maintain that collaborative governance. Therefore, transaction costs are an important determinant for the emergence and operation of collaborative governance mechanisms.

Moreover, ecological environment protection is a public good that generates positive externalities for the wider society. Therefore, it is crucial for different levels of government to work together to solve environmental protection issues. In China, local governments have increasingly relied on intergovernmental cooperation to address environmental challenges (Chen et al., 2015; Yi et al., 2018). Given China’s centralized governance system and top-down control, cooperation between frontline and higher-level governments is particularly important for effective ecological and environmental governance (Ye, 2009; Zhang and Wu, 2018). Frontline governments are responsible for implementing environmental policies at the local level, while higher-level governments are responsible for formulating policies and regulations that guide resource management practices. Without cooperation between the two levels of government, the implementation of environmental policies at the local level can be challenging (Zhang, 2020). The relationship between the frontline government and the higher-level government is a principal-supervision-agent relationship. The higher-level government can act as a supervisor or manager depending on the situation. In cases where it acts as a supervisor, a shelter network may be formed between the frontline government and the higher-level government to cover up omissions and problems in the implementation of policies (Emerson et al., 2012; Kwon and Kim, 2014). In this scenario, the cooperation between the frontline government and the higher-level government fails to effectively control the ecological environment and can lead to asymmetric policy information. As such, it is essential for the cooperative relationship between the two levels of government to be open, transparent, and based on mutual trust.



Classical rational choice theory tells us that it is not enough to govern public pool resources only through intergovernmental cooperation. The government must bring the public into the cooperative system in order to achieve effective governance (Ostrom, 1990; 2009; Agrawal, 2001). The actual beneficiaries of the frontline policies of the public, the cooperation between the frontline government and the public can better implement the actual goals of environmental protection. One approach to promoting collaboration between frontline government agencies and the public is through participatory governance. Participatory governance involves the active engagement of citizens and stakeholders in the decision-making process (Salamon, 2002; Gatto and Sadik-Zada, 2021). By involving the public in the management of CPRs, frontline government agencies can gain valuable insights into local resource management practices and promote transparency and accountability (Ostrom, 1990). However, participatory governance is not without its challenges. One of the key challenges is ensuring that all stakeholders have equal access to information and resources (Salamon, 2002). In some cases, the public may lack the resources or expertise to effectively participate in the decision-making process. Frontline government agencies can play a critical role in addressing these challenges by providing technical assistance, building capacity, and facilitating communication and collaboration (Imperial and Yandle, 2005; Berkes, 2007).

Another form of cooperation between the government and the public is known as collaborative governance. Collaborative governance involves the cooperation of various stakeholders, including high-level governments, frontline government agencies, and the public, in the management of the ecological environment (Ansell and Gash, 2008). Collaborative governance can be an effective approach to managing the ecological environment because it can promote transparency, accountability, and innovation (Ostrom, 1990). One of the key challenges to collaborative governance is the management of power dynamics (Ansell and Gash, 2008). In some cases, powerful stakeholders may dominate the decision-making process, leading to inequitable outcomes. Frontline government agencies can play a critical role in addressing power imbalances by serving as neutral facilitators, ensuring that all stakeholders have equal access to information and

resources, and promoting dialogue and collaboration (Imperial and Yandle, 2005).

Based on the above discussion and the ICA framework, we can establish a theoretical basis for frontline government cooperation, as shown in Figure 1 below. On one hand, voluntary mechanisms and coercive force interventions form a group of contrasts, while on the other hand, the number of participants can form another group of contrasts, with fewer participants being contrasted with many participants. Each coordination mechanism is determined by the transaction cost and coordination risk during its formation stage. During the operation of the collaborative mechanism, any changes in the two factors require a corresponding adjustment to the mechanism's design. When transaction costs and collaboration risks are low, collaborators can generate voluntary cooperation models and use informal methods to reach cooperation quickly. In this paper, "upward cooperation" among vertical governments embodies this approach. However, when information becomes opaque and supervision weakens, the risk of synergy increases significantly. As a result, the expected income from the operation of informal mechanisms tends to decline rapidly. Therefore, grassroots governments may seek cooperation with external government partners, leading to the formation of "downward cooperation." Obviously, in this case, the key reason for the change of intergovernmental transaction cost is the change of system. Therefore, we will establish theoretical discussions and theoretical hypotheses related to this later.

In this paper, we will use the fsQCA method to discuss the changes in the cooperation partners of frontline governments in environmental governance and the reasons behind this change. In the next section, we present our theoretical presuppositions and underlying hypotheses.

3 Theoretical presuppositions and research hypotheses

3.1 Theoretical presuppositions

To investigate the issue of "choice and transformation of cooperation partners of frontline environmental policy

implementers in environmental governance” in this study, it is essential to understand why the cooperation partner of frontline environmental policy implementers has changed from the higher-level government to the public. Thus, research on the cooperation mechanism between frontline environmental policy implementers and other subjects in the process of policy implementation process becomes the focal point of this research stage. Environmental governance cooperation with the government as the main body has become a widespread practice of governments around the world in various forms, such as collaborative governance (Ansell and Gash, 2008), network governance (Provan and Kenis, 2008), intergovernmental cooperation (Mueller, 2009), government-public partnership (Jing and Savas, 2009), and interlocal cooperation (Youm and Feiock, 2019). These concepts from public management all involve some form of “cooperation” between the government and other organizational objects. Some of the above concepts involve vertical intergovernmental cooperation and horizontal cross-departmental cooperation between frontline environmental policy implementers and government internal actors, and also involve cooperation between frontline environmental policy implementers and social actors. These studies offer a solid research background for changes in the partners and forms of frontline environmental policy implementers. This study’s government cooperation focus is limited to cooperation behaviors that are acceptable to superiors, making it necessary to concentrate on the initial conditions and driving factors of cooperation behaviors in the policy implementation process.

Collaboration between governments and various stakeholders does not occur automatically but depends on initial conditions and drivers (Ansell and Gash, 2008; Emerson et al., 2012). According to Ansell and Gash’s research, they categorize the initial conditions and driving factors of government cooperation into the following three types: compatibility of power and resources, participation incentives, and cooperation history. Their type incorporates many other mechanisms into their analytical framework, such as social capital, trusted commitment. However, there is a certain difference between the cooperation-type government cooperation and cooperative governance involved in this study. Based on the excavation of the construction case of the Ecological Demonstration Zone in H City, Z Province, and the theoretical hypotheses of the new institutionalism organization, the author revised Ansell and Gash (2008) framework in two aspects and added two dimensions of task attributes and socio-economic development level, attempting to adapt the theoretical framework to the context of collusive behavior organizations.

- A. The superior task attributes of fuzziness and determinism: New institutionalist organizational theory posits that the logic of government behavior is determined by the institutional environment in which government organizations operate (March 1988). The cooperation between frontline environmental policy implementers and middle-level governments is an organizational behavior that emerges from the combination and tension of formal and informal institutions with Chinese characteristics. Under the deterministic task model, frontline environmental policy implementers at the end of policy implementation are under tremendous pressure to complete various tasks and indicators assigned by the higher-level government. This contradiction leads to the formation of “upward cooperation” (Zhou, 2017). In the case of the construction of an Ecological Demonstration Zone in H City, Province Z, the shift in the way of cooperation among frontline environmental policy implementers is accompanied by changes in the attributes of deterministic tasks. The focus of fuzzy tasks is not to seek quantity and efficiency but to seek innovation and quality. The task model it points to has a high degree of fuzziness, and fuzzy tasks aim to improve governance efficiency qualitatively. This change in the institutional environment may have impacted the collusive behavior of frontline environmental policy implementers.
- B. Qualitative and quantitative superior inspection and acceptance methods: Scholars such as Ansell believe that the involvement of superior government officials affects the cooperation of government organizations through incentive mechanisms (Ansell and Gash, 2008; Emerson et al., 2012). As superior leaders play a critical role in formulating and maintaining cooperation rules (Vangen and Huxham, 2003), their behavior during the inspection and acceptance process can significantly impact the behavior of profit-seeking frontline environmental policy implementers, even if they do not personally participate in the cooperation. For instance, during the construction of an Ecological Demonstration Zone in H City, Province Z, the whole-process, face-to-face qualitative and on-site acceptance has replaced the previous result-oriented, level-by-level quantitative indicator acceptance, making the cooperation space between the frontline environmental policy implementers and the middle-level government restricted. The participation of higher-level governments (provincial governments) in the inspection and acceptance process has caused frontline environmental policy implementers to face stronger subordinate incentives (Li et al., 2016; Yi et al., 2018). Therefore, we consider the qualitative and quantitative methods of inspection and acceptance by superiors to be one of the reasons why frontline environmental policy implementers adjust their cooperation partners.
- C. The Compatibility of tasks and resources: The imbalance between power and resources is a common problem in cooperation (Ansell and Gash, 2008). When power and resources are out of balance, the strong take the initiative and the weak find it difficult to participate effectively, leading to distrust or weak commitments. However, in government cooperation, whether it is the middle-level government or the general public, a political power imbalance exists between them and frontline environmental policy implementers, so there is no forced hijacking of weak organizations by strong organizations, as suggested by Ansell and Gash (Sedgwick, 2016). This is due to the fact that the government collaborators of the cooperation are under task pressure from the higher government, the purpose of which is to respond to its task instructions. Therefore, the imbalance between tasks and resources should be an important reason for government cooperation.
- D. History of cooperation with society: The history of cooperation is the starting point for creating trust between partners. If there is a mechanism that encourages capital accumulation and trust formation between partners in the past, they are more likely to

establish high-level communication and credible commitment (Ansell and Gash, 2008). Cooperation history as a “soft indicator”, applies to two kinds of cooperation objects in government cooperation behavior: The middle-level government and the public. In the interaction between the state and society, scholars believe that the history of cooperation between the government and society is relatively important for the subsequent benign interaction between them. The extent to which citizens are protected by the state determines the level of trust between citizens and the state, while the extent to which citizens are protected by state public goods and credible cooperation determines the level of cooperation between citizens and the state (Tilly, 1992; Tilly, 2004; Simpson and Willer, 2015), particularly in the case of environmental governance (Teets, 2013; Shen, 2017). Therefore, this study also takes the cooperation history into the analysis.

- E. The level of social and economic development: The tacit understanding and even cooperation between frontline environmental policy implementers and the public in policy implementation has attracted widespread attention in the academia. The empirical research on “the role of social capital in policy implementation” in Western sociology has a generally accepted view: the interaction between social organizations, social groups and associations and the government can improve frontline policy performance and social satisfaction (Riley, 2005; McFarland and Thomas, 2006; Lee, 2007). Some researchers also believe that changes in resource elements or policy systems have shifted the relationship between society and frontline environmental policy implementers from conflict to cooperation, and they actively participate in the implementation of frontline policies (Zhang, 2020). Since there is a significant correlation between the quality of public goods provided by frontline environmental policy implementers and the level of social and economic development, in the “downward cooperation”, whether the frontline environmental policy implementers can cooperate with the public also depends on the public’s degree of profit. Therefore, the level of socio-economic development has also been incorporated into one of the presupposed concepts of the study.

3.2 Research hypotheses

This study proposes a causal framework for changes in the partners of frontline environmental policy implementers based on the five initial conditions and drivers of government cooperation presented in the research hypotheses. The starting point for government cooperation in environmental governance is the initial institution (deterministic or fuzzy attributes of superior tasks) and acceptance methods (qualitative or quantitative superior inspection and acceptance methods), which determine the relationship between the middle-level government and frontline environmental policy implementers. Whether the patronage relationship between them continues to exist. If the tasks and resources faced by frontline environmental policy implementers are not compatible enough, even if they cannot collude with the middle-level government, they will still have a

need for cooperation. The history of cooperation with the society and the level of social and economic development will form a new interest community (or “interest alliance”) between the frontline environmental policy implementers and the public, and through the informal behavioral changes “downward cooperation” to deal with the inspection and acceptance of higher-level governments. Therefore, the initial institution and acceptance method are the logical starting point, the compatibility of tasks and resources, cooperation history, and the level of social and economic development are the adjustment factors, and the interest alliance between frontline environmental policy implementers and the public is the intermediate process. The final result of the analysis is the change of the cooperation object from the superior to the public.

Based on the above theoretical discussion and the theoretical framework of ICA, this study proposes the following research hypotheses.

Hypothesis 1: In the policy implementation process where the initial institution is a deterministic task model and the acceptance method is quantitative index acceptance, a stable patronage network exists between frontline environmental policy implementers and the middle-level government, and the cooperation object of the frontline environmental policy implementers is the middle-level government, and the behavior of “upward cooperation” still exists.

Hypothesis 2: In the process of policy implementation where the initial institution is a fuzzy task model and the acceptance method is qualitative and on-site acceptance, the patronage network between frontline environmental policy implementers and middle-level government disintegrates. However, due to sufficient compatibility between tasks and resources, the likelihood of collusive behavior occurring is low.

Hypothesis 3: In the process of policy implementation where the initial institution is a fuzzy task model and the acceptance method is qualitative and on-site acceptance, the patronage network between frontline environmental policy implementers and the middle-level government disintegrates, and the compatibility between tasks and resources is insufficient. However, due to the limited cooperation history and economic development level, it is difficult to establish an interest alliance between frontline environmental policy implementers and the public (there is also the possibility of administrative control of society), and the possibility of “downward cooperation” is low.

Hypothesis 4: In the process of policy implementation where the initial institution is the fuzzy task model and the acceptance method is qualitative and on-site acceptance, the patronage network between frontline environmental policy implementers and middle-level government disintegrates, and the compatibility between tasks and resources is insufficient. However, due to the cooperation history and the level of economic development is relatively good, the formation of an interest alliance between the frontline environmental policy implementers and the public, the cooperation object of the frontline environmental policy implementers has changed to the public, and the possibility of “downward cooperation” is high.

In addition to the above main concepts, we also discuss other mechanisms not mentioned in the subsequent chapters. It should be pointed out that although these concepts are independent of each other, it cannot be ruled out that they influence each other. In qualitative comparative analysis, if there is a certain relationship between the processing variables, the causal relationship of the analysis will be more significant, which is just the opposite of the requirement that variables are independent of each other in quantitative analysis.

4 Qualitative comparative analysis of cooperation in environmental governance

4.1 Case applicability analysis

Qualitative Comparative Analysis (QCA) is a comparative research method and causal method based on Boolean algebra and fuzzy sets, introduced by sociologist Charles Ragin to comparative political research (Ragin, 1989). There are three clear advantages of using qualitative comparative analysis to study the change of cooperation objects of frontline environmental policy implementers in government cooperation behavior: A. The advantage of the sample: In City H of Province Z, a total of 39 townships were covered by the fuzzy task model in the construction of ecological demonstration areas, and less than 40 government units were studied overall. This sample size is a poor sample size for usual statistical analysis. B. The advantage of analyzing complex paths: Collusive behavior in government cooperation may have multiple and intricate paths, and relying solely on individual case studies is inadequate to meet the research needs. Therefore, presenting as many combinations of antecedent conditions as possible ensures the completeness of research conclusions and facilitates the exploration of different paths of change in government cooperation objects in environmental governance. C. Providing possible explanation paths: QCA provides insights into the institutional logic of cooperation behavior in environmental governance with the characteristics of “performative politics” and inspires subsequent accurate institutional logic of government cooperation in environmental governance, as compared to quantitative research, case study, and comparative case study. While QCA is considered to have limited power of causal explanation, it provides a relatively effective explanation path. Therefore, it can provide a valuable reference for subsequent quantitative research and case studies to reveal the accurate institutional logic of government cooperation in environmental governance.

4.2 Research method of qualitative comparative analysis

This study uses the fuzzy set qualitative comparative analysis method (fsQCA). The qualitative comparative analysis method combines the advantages of qualitative analysis (case-oriented) and quantitative analysis (variable-oriented) and can conduct comparative analyses on complex cases. Specifically, the

qualitative comparative analysis method regards a case as a set of attributes, converts multiple attributes into configurations, abstracts case information into different configuration sets, and then uses set theory and Boolean algebra to simplify and roughly operate, analyzing different paths that lead to outcomes. Unlike regression analysis, qualitative comparative analysis emphasizes the complexity of social science, focusing on exploring how different combinations of factors lead to similar social outcomes. In this operation, two essential metrics are the causal relationship between conditions and outcomes (Li et al., 2016). Consistency indicates how consistently cases sharing a given condition or combination of conditions show outcomes, and coverage indicates how well a cause or combination of causal factors explains an instance. There are three types of qualitative comparative analysis methods: definite-set qualitative comparative analysis (csQCA), multivalued-set qualitative comparative analysis (mvQCA), and fuzzy-set qualitative comparative analysis (fsQCA). Fuzzy-set qualitative comparative analysis allows for a fine grading of the degree of membership, and the condition can take any number between 0 and 1. Since our measurement of the compatibility of tasks and resources of frontline environmental policy implementers is evaluated in a fine-grained manner, this study chooses the fuzzy-set qualitative comparative analysis method.

4.3 Analytical process of qualitative comparative analysis

4.3.1 Sample selection key variables

This study is based on a case study of the implementation of the Frontline Ecological Demonstration Zone construction in H City, Z Province. The study uses observation, interview, and document research methods to analyze key variables. From December 2020 to September 2021, the authors' research group conducted field observations, semi-structured interviews, and document analysis in sample villages and towns, collecting qualitative data. The dependent variable (the cooperation object of frontline environmental policy implementers) and independent variables (compatibility of tasks and resources, arrangement of task attributes, inspection and acceptance forms, social and economic development, and cooperation history) were induced and summarized.

There are a total of 46 research objects in this study, all of which are towns designated as ecological demonstration areas by prefecture-level cities in Z Province. From the perspective of task attributes, the research samples are divided into two parts. The first part includes 39 towns that have adopted the fuzzy task model in the construction of ecological demonstration areas and are listed as the “key objects of Ecological Demonstration Area construction” in H City. The second part includes seven towns in Q City and L City that still adopt the deterministic task model in the construction of the ecological demonstration area. These two types of towns have different collusive behaviors, making them suitable for qualitative comparisons based on results. From the perspective of the cooperation object of the dependent variable, the research samples are divided into three parts: upward cooperation in cooperation with the middle-level government, downward cooperation in cooperation with the public, and non-cooperation

caused by the “step-by-step” (substantive implementation) or “suspension” (symbolic implementation) of frontline environmental policy implementers.

4.3.2 Theoretical interpretation and measurement calibration of variables

- A. Cooperation partners of frontline environmental policy implementers: The cooperation partner of frontline environmental policy implementers are the dependent variable in this study, which refers to the cooperation and cooperation objects of frontline environmental policy implementers in the face of higher-level government inspection and acceptance. Because in the actual research, there is an obvious trade-off between the two cooperation phenomena of “upward cooperation” and “downward cooperation”, which belong to the condition of whether or not, so the formation of “upward cooperation” (If it cooperates with the middle-level government), it is marked as 1, and if it is not, it is marked as 0; if it forms the “downward cooperation” (cooperating with the public), it is marked as 1, and if it is not, it is marked as 0. Among them, the analysis of “downward cooperation” (cooperating with the public) as the dependent variable is the most important part of this research.
- B. The layout of task attributes: The implementation of fuzzy tasks is an independent variable in this study and is the initial institution in the research hypotheses. It replaces the previous deterministic task mode. The measurement of this variable is based on the author’s retrieval of provincial and municipal policy documents and observation of the township government’s implementation of environmental policies. As there is an either-or task pattern between the fuzzy task pattern and the deterministic task pattern, which belongs to the dichotomous condition, the samples that implement the fuzzy task pattern are calibrated as 1, and the samples that implement the deterministic task pattern are calibrated as 0.
- C. The form of inspection and acceptance by superiors: The form of inspection and acceptance by superiors is regarded as one of the logical starting points of government cooperation in this study due to its specific institutional characteristics. Theoretically, after the higher-level government implements fuzzy tasks, it must be equipped with qualitative field acceptance methods to replace quantitative index acceptance methods to achieve “responsibility isomorphism” (DiMaggio and Powell, 1983). However, in real cases, the initial system has turned into a vague task model, but the actual inspection and acceptance is still dominated by quantitative indicators, that is, the so-called “incomplete reform” still exists in some towns. To better identify changes in the form of inspection acceptance, we included this factor as an independent variable in the study. As there is an either-or task mode between the qualitative field acceptance method and the quantitative index acceptance method, which belongs to the dichotomous condition, the sample that implements the qualitative field acceptance method is calibrated as 1, and the sample that implements the quantitative index acceptance method is calibrated as 0.
- D. Compatibility of tasks and resources: The compatibility of tasks and resources is the dependent variable in this study, referring to whether the task burden faced by frontline environmental policy implementers aligns with the resources that can be assigned to tasks. If tasks and resources are compatible, frontline environmental policy implementers can carry out tasks step-by-step without cooperation to deal with inspection and acceptance from superiors. However, if tasks and resources are not compatible, frontline environmental policy implementers need to use cooperation to handle inspection and acceptance from superiors. In empirical research, there are many indicators that can measure tasks and resources, but the most authoritative one is the ratio of the local resident population to the township establishment population in the township jurisdiction to reflect the matching degree between local frontline governance tasks and human resources (Chen and Li, 2020). According to the overall situation of township construction in the Ecological Demonstration Zone of Z province, the author set three anchor points, among which the minimum value of the ratio of the local resident population to the township establishment population in the township area (L city, J county, Y town) is the lowest compatible anchor point, with 0 as the minimum fuzzy value. The maximum value of the ratio of the local resident population to the township establishment population in the township area (H city, C county, F town) is the highest compatible anchor point, and 1 is the maximum fuzzy value. The average value of Z province is taken as the medium compatible anchor, with 0.5 as the intermediate fuzzy value.
- E. Socio-economic development: Socio-economic development is the independent variable in this study. As the author stated in the research hypothesis, there is a significant correlation between the quality of public goods provided by frontline environmental policy implementers and the level of social and economic development. In “downward cooperation,” the cooperation between frontline environmental policy implementers and the public depends on the degree of profit to the public. Therefore, socio-economic development may impact whether the public actively cooperates with frontline environmental policy implementers or passively accepts their mobilization. The study uses the change degree of land value (agricultural transfer land, industrial land) in each township from 2011 to 2020 to reflect the macro-social and economic development of the township. If the land value increases by more than 30%, it is considered that the level of economic development is good, and the sample is marked as 1. If the increase in land value does not exceed 30%, it is considered that the level of economic development is not good, and the sample is marked as 0.
- F. History of cooperation with society: History of cooperation with society is the independent variable in this study. The authors evaluate the history of cooperation between frontline environmental policy implementers and society in various places through document retrieval and field observation. The evaluation of the implementation performance of the rural domestic waste classification and treatment policy in Province Z, which was implemented since 2016, can reflect the cooperation between local frontline environmental policy implementers and the society. The policy requires the classified collection and treatment of rural domestic waste to achieve full coverage and popularization in all organized villages. In this study, townships that passed the evaluation in the first

TABLE 2 Calibration thresholds and data sources of data.

Outcome variable/ Condition variable	Assignment	Evaluation criteria	Data source
<i>Cooperation partners of frontline environmental policy implementers</i>	0	Form the “upward cooperation”	Government portal announcements, news reports, semi-structured interviews, on-site observations
	1	Form the “downward cooperation”	
<i>The layout of task attributes</i>	0	Implement the deterministic task pattern	Government documents, semi-structured interviews, field observations
	1	Implement the fuzzy task pattern	
<i>The form of inspection and acceptance by superiors</i>	0	The higher-level government implemented the acceptance method of quantitative indicators	Government documents, semi-structured interviews, field observations
	1	The higher-level government implemented the qualitative and on-site acceptance method	
<i>Compatibility of tasks and resources</i>	0	From 2011 to 2020, the land value in the jurisdiction will increase by more than 30%	Statistical Yearbook, Urban Economic and Social Development Statistical Bulletin
	1	From 2011 to 2020, the increase in land value within the jurisdiction did not exceed 30%	
<i>Socio-economic development</i>	0	The first round and the second round of rural domestic waste sorting and treatment policies are up to the city-level inspection and acceptance	Government documents, government portal announcements, news reports
	1	The municipal acceptance of the first and second rounds of rural domestic waste classification and treatment policies failed to meet the standards	
<i>History of cooperation with society</i>	0 (minimum fuzzy value)	The minimum value of the ratio of the local resident population to the township establishment population within the township jurisdiction of Province Z (Y Township, J County, L City)	Government documents
	0.5 (middle fuzzy value)	The average value of the local resident population to the township establishment population in the township area of Z province	
	1 (maximum fuzzy value)	The maximum value of the ratio of the local resident population to the township establishment population within the township jurisdiction of Province Z (F Township, C County, H City)	

and second rounds of city-level acceptance are regarded as having a good history of cooperation with society, and the sample is calibrated as 1. Townships that failed in the first and second rounds of city-level acceptance are considered to have a poor history of cooperation with society, and the samples are marked as 0.

Table 2 below shows the calibration thresholds and data sources of each conditional variable and outcome variable data in the study.

5 Results analysis

5.1 Univariate necessity analysis

The necessity analysis of univariate is used to reflect the explanatory ability of a single antecedent condition to the outcome variable, and consistency is an important criterion of necessity and sufficiency. It is generally believed that if the consistency of the conditional variable falls within the interval of [0.8, 0.9], it constitutes a sufficient condition for the outcome variable; if the consistency of the conditional variable falls within the interval of [0.9, 1.0], it constitutes the necessary condition.

Table A1 in the appendix presents the results of the univariate necessity analysis with “downward cooperation” (i.e., cooperating with the public) as the dependent variable. The findings demonstrate that “fuzzy tasks” and “qualitative and on-site inspection and acceptance methods” serve as necessary conditions for the collaboration between frontline environmental policy implementers and the public, with corresponding coverage rates of 0.65 and 0.67, respectively. Meanwhile, Table A2 reports the results of the univariate necessity analysis with “upward cooperation” (i.e., cooperating with the middle-level government) as the dependent variable.

The univariate necessity analysis reveals that the two mechanisms of “fuzzy tasks” and “qualitative and on-site inspection and acceptance methods” possess significant explanatory power in “downward cooperation” (cooperating with the public). This indicates that the collaboration between frontline environmental policy executors and the public largely hinges on the nature of the task and the method of acceptance. In other words, a shift in the initial institution, as well as the use of a fuzzy task model and a qualitative on-site inspection and acceptance approach, are critical to this collaboration. Conversely, “fuzzy tasks” and “qualitative and on-site inspection and acceptance methods” do

not represent the necessary conditions for the cooperation between frontline environmental policy implementers and middle-level governments (“upward cooperation”). This finding reinforces our research hypothesis.

Furthermore, while the univariate necessity analysis suggests that other variables fail to satisfy the criteria for necessary or sufficient conditions of “downward cooperation” (cooperating with the public), it is crucial to note that the two necessary conditions do not reach full case coverage of the coverage rate. It is possible that multi-factor interaction contributes to this finding. As such, it is necessary to perform a multi-factor combination analysis.

5.2 Condition combination analysis

Table 3 is an analysis of the combination of conditions with “downward cooperation” (cooperating with the public) as the dependent variable. The table presents 4 configurations (paths), and the consistency level of the single solution and the total solution is higher than the set standard of 0.8, reaching 0.95. The coverage rate of the total solution is 0.77, which is much higher than the threshold of 0.3 for mixed first-hand and second-hand data in the field of management. Therefore, the four configurations (paths) in the conditional combination analysis have strong explanatory ability. These four configurations (paths) can be regarded as a combination of sufficient conditions for cooperation and cooperation between frontline environmental policy implementers and the public during the construction of an ecological demonstration zone in H City, Province Z.

The fifth section of this study will further organize the analysis and interpretation of the univariate necessity and sufficiency analysis and condition combination analysis.

6 Discussion: The paths of frontline governmental cooperation in environmental governance

6.1 Analytical framework for formation paths

To simplify the theoretical logic and enhance the validity of the research explanation, this paper proposes an analysis of frontline environmental policy implementers in cooperation behavior. This is based on the core conditions contained in the four paths of the aforementioned condition combination analysis, as well as the explanation logic of parsimony analysis. The path of cooperation with the middle-level government, frontline environmental policy implementers, and the public is the institutional motivation behind possible changes in the cooperation objects behind the frontline cooperation. Among these, the cooperation path has two core conditions—fuzzy task mode and qualitative and on-site inspection and acceptance method—which can be derived from the first, third, and fourth paths.¹

The path of institutional dynamics implies that frontline environmental policy implementers consider the need for qualitative and on-the-spot methods to check and accept frontline policy implementation performance under the fuzzy task model. Therefore, frontline environmental policy implementers cooperate with the public to respond to higher-level requirements. This reflects the organizational motivation of frontline environmental policy implementers to deal with the task mode and inspection form of their superiors. In the path of institutional dynamics, the fuzzy task model and the qualitative and on-site inspection and acceptance method constitute the analysis dimension of the path. The attributes of the task determine whether the middle-level government will regard the policy implementation performance of the frontline environmental policy implementers as its own interest category. In the deterministic task model, while the middle-level government acts as the entrusting party’s supervisor, the higher-level government transfers part of the acceptance right to the middle-level government, making the middle-level government not only the supervisor of the frontline environmental policy implementers but also the collusive partner of the frontline environmental policy implementers. Under the fuzzy task model, part of the acceptance right of the middle-level government is taken back by the higher-level government, which leads to the disappearance of the supervision-cooperation “dual role” of the middle-level government, and the loss of motivation to cooperate with frontline environmental policy implementers. The method of inspection and acceptance by superiors determines whether frontline environmental policy implementers have the motivation to bring the public into cooperation. In the inspection and acceptance method of quantitative indicators, frontline environmental policy implementers do not need to cooperate with the public. In the qualitative and on-site inspection and acceptance method, frontline environmental policy implementers need to deal with the on-site inspections and visits of superior inspectors. Therefore, it is necessary for the beneficiaries of frontline Ecological Demonstration Zone construction - the public to participate in the cooperation and respond to superiors. Therefore, an analytical framework (as shown in Figure 2) can be constructed to explain the four situations of cooperation among frontline environmental policy implementers in the path of institutional dynamics on the basis of a two-dimensional framework.

6.2 The organizational context of “upward cooperation”

When the task attribute of the frontline policy is deterministic, and the higher-level government wants to measure the effectiveness of the implementation of the policy by the frontline environmental policy implementers under the deterministic task objectives, the frontline environmental policy implementers respond to the higher-level government’s demands through “upward cooperation” in terms of inspection and acceptance. Under the system-dominated behavior logic, frontline environmental policy implementers focus more on key

¹ Because the original coverage and unique coverage of the second path are too low, it is not enough to support the theoretical explanation of its path, so we give up the second path and its explanation in the follow-up discussion.

TABLE 3 Analysis of Conditional Combination with “downward cooperation” (cooperating with the public) as the dependent variable.

Condition variable	Path 1	Path 2	Path 3	Path 4
The layout of task attributes	●		●	●
The form of inspection and acceptance by superiors	●	○	○	●
Compatibility of tasks and resources (between 0 and 1)		○	○	○
Socio-economic development		●	●	●
History of cooperation with society	●	○		●
Consistency of solution	0.94	1	1	1
Original coverage	0.68	0.02	0.17	0.27
Unique coverage	0.478	0.02	0	0
Consistency of total solution	0.95			
Coverage of total solution	0.77			

Note: ○ means the condition does not exist, ● means the condition exists. Large icons represent core conditions, and small icons represent peripheral conditions.

“Downward cooperation” (cooperating with the public) = The layout of task attributes * The form of inspection and acceptance by superiors * History of cooperation with society + ~ The form of inspection and acceptance by superiors * ~compatibility of tasks and resources * Socio-economic development * ~ History of cooperation with society + The layout of task attributes * The form of inspection and acceptance by superiors * ~ Compatibility between tasks and resources * Socio-economic development * History of cooperation with society.

concepts such as “quantitative”, “indicators”, “bottom line”, and “growth” in terms of policy implementation performance. In further field investigations and semi-structured interviews, it was discovered that some frontline environmental policy implementers in Province Z, which has “poor economic development, weak government capacity, and hardened social cooperation”, are skilled in using informal behaviors to negotiate with the Ecological Demonstration Zone Construction Office of the county-level business department and promote cooperation with it. Many examples can be found from interviews:

“I work in the township, but my home is in the county seat. Almost every Thursday afternoon, I drive back early. Going back is not going home, but going to “go to the superior” to explain the situation, so this is also my working time. (Interview transcript B202101110A)”

“This is not only our business, but also the affairs of the higher authorities. They can not ignore it. (Author’s note: Higher-level policy requirements). (Interview transcript B202101130C)”

6.3 The organizational context of “downward cooperation”

Under the fuzzy task model, the inspection and acceptance method of the higher-level government will shift from quantitative goal-oriented to qualitative field-oriented. Both qualitative and on-the-ground requirements require frontline environmental policy implementers to find the public as the object of their cooperation to deal with the higher-level government. Further field observations and interviews revealed that frontline environmental policy implementers not only urgently need to participate in social forces in higher-level inspection and acceptance but also implement policies in the

“spotlight project” of construction. This means that the form of cooperation between frontline environmental policy implementers and the public will not be the same as that of the middle-level government, such as “false reporting” and “concealment of reporting”, but will focus on the “symbolic project” built locally.

In this organizational context, the middle-level government is more focused on the task progress of frontline environmental policy implementers, and promotes the overall implementation progress of the project through meetings and regular inspections. After the first 3A-level scenic spot in D Town, J County, H City, landed in the “Strong Village”, the middle-level government represented by J County became the main body supervising the implementation progress and improving the quality of project construction. Due to the decentralization of goal-setting power and the upward collection of inspection and acceptance power due to vague tasks, the middle-level government has shifted from a supervisor to a decision-maker with partial decision-making power. Therefore, the middle-level government continually “repairs” and “improves” the “spotlight project” built by the frontline environmental policy implementers in the process of policy implementation, so as to highlight their achievements in the field inspection by the higher-level government.

“When the county leaders who participated in the Construction of the Ecological Demonstration Zone came to the town for inspection, our environmental scenic spot project was still under construction at that time, and most of the nodes had been fixed and could not be changed. Leaders listened to the report and looked at the floor plan. They thought that the level of some things is not high enough, and we still need to further improve the establishment of the “spotlight project.” For example, our greening used to be a variety of *Ophiopogon japonicas*. According to the requirements of the leaders, we need to make exquisite greening sketches and artificial landscapes. (Interview transcript A20210619C)”

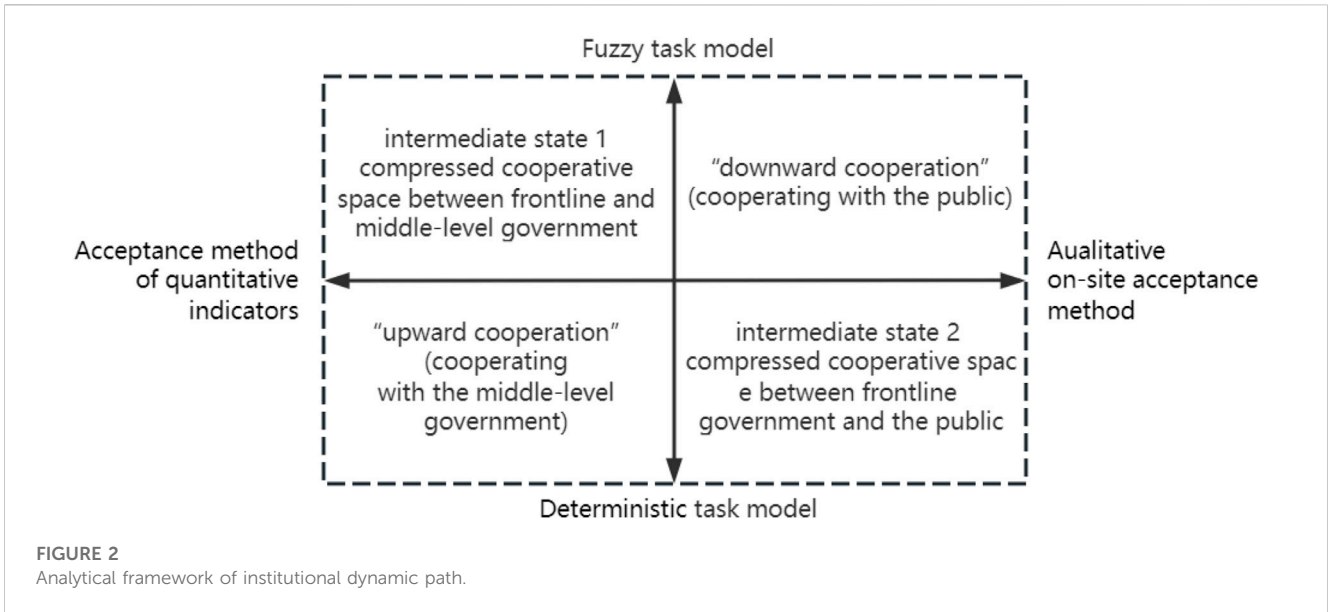


FIGURE 2 Analytical framework of institutional dynamic path.

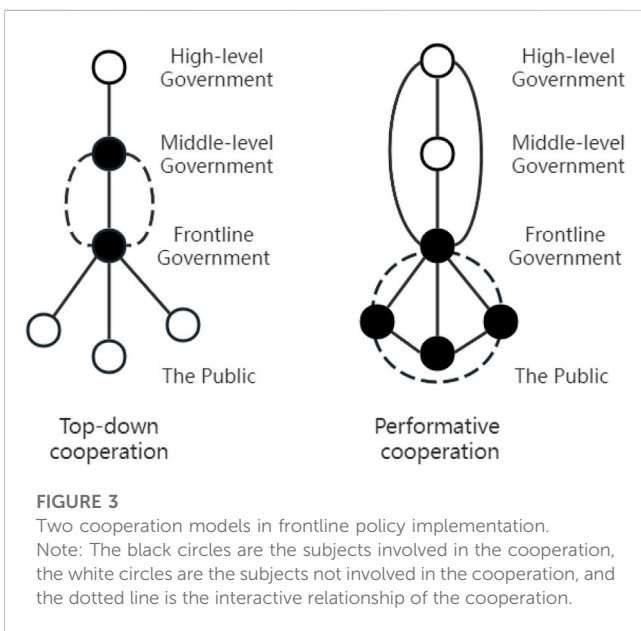


FIGURE 3 Two cooperation models in frontline policy implementation. Note: The black circles are the subjects involved in the cooperation, the white circles are the subjects not involved in the cooperation, and the dotted line is the interactive relationship of the cooperation.

6.4 The organizational context of “intermediate state”

There are two intermediate stages in this path: the “fuzzy task model + inspection and acceptance of quantitative indicators” and the “deterministic task model + qualitative and on-site inspection and acceptance.” After conducting follow-up empirical investigations, these intermediate stages were found to generally appear in the middle stage of institutional reform when it has begun but has not yet been completely implemented. At this stage, frontline environmental policy implementers may either inherit the old system and conspire with the middle-level government, advance with the times and cooperate with the public, or adopt a wait-and-see attitude and temporarily suspend cooperation.

To sum up, the organizational performance of the cooperation model of “upward cooperation” and “downward cooperation” is shown in Figure 3 below.

7 Conclusion

Existing research has provided a rich description of policy implementation fluctuations in contemporary China’s environmental governance. Numerous literatures use inter-governmental “upward cooperation” as a theoretical framework to analyze and explain how frontline environmental policy implementers and middle-level governments cooperate with each other and adopt various strategies to deal with inspections and acceptances from higher-level governments. Building on this, this paper proposes a research puzzle: In the policy environment of ambiguous tasks, how does the change in control rights affect the vertical intergovernmental power structure during task execution, thereby compressing the space for “upward cooperation”? Who will frontline environmental policy implementers cooperate with in response to inspection and policy requirements from higher-level governments? What coping measures will frontline environmental policy implementers use instead of “upward cooperation”?

In view of this, first of all, this paper constructs an ICA framework to discuss the changes in the form of intergovernmental cooperation due to changes in transaction costs. It also emphasizes that institutional change is an important reason for the change (increase) of transaction costs. Using the framework of Ansell and Gash (2008), we propose five mechanisms that affect the establishment of government cooperation: fuzzy/deterministic superior task attributes, qualitative/quantitative superior inspection and acceptance methods, compatibility of tasks and resources, the history of cooperation with society, and the level of social and economic development. Next, using the fuzzy set qualitative comparative analysis of the implementation cases of frontline ecological demonstration zone construction in H City, Z

Province, we present three conditional patterns of collusive behavior of frontline environmental policy implementers in China, along with various causal paths. We then put forward the dominant path of institutional dynamics that leads to the gradual replacement of “upward cooperation” with “downward cooperation.” The path of institutional dynamics refers to the fact that under the fuzzy task model, the higher-level government needs to conduct qualitative and on-site inspections when assessing the performance of frontline policy implementation. Therefore, environmental policy executors at the frontline level must give up cooperation with the middle-level government and instead seek to cooperate with the public to respond to higher-level demands.

Therefore, this study suggests that the analytical role of social power in environmental governance should not only focus on the “state-society relationship” but also further discuss its dynamic influence in the “central-local relationship”, bringing social factors into environmental policy processes and government behaviors. Previous studies often prioritized bureaucratic control and organizational structure when discussing the implementation fluctuations of frontline environmental policy implementers and looked for their informal interaction objects in the bureaucracy, focusing on government agencies both vertically and horizontally. However, different from the original literature, this study finds that frontline environmental policy implementers not only interact with other government agencies during selective implementation but also extend their cooperative relationship to the public. In the current institutional environment of changes in control rights, the latter seems to show stronger explanatory power than the former. Based on the discovery of the path of institutional dynamics in the collusive behavior of environmental policy implementers at the frontline level, future research needs to clarify the impact of institutional changes on collusive behavior in environmental governance. Of course, there are still some research limitations in this study. First, the sample coverage is insufficient: this study analyzed the case in the northern part of Province Z, and did not systematically discuss other areas covered by the Ecological Demonstration Zone. Second, potential partners is ignored: This study only discusses cooperation between frontline governments, higher-level governments and the public, ignoring that

other frontline governments may also be one of the partners. Third, the form of cooperation is limited: This study discusses the cooperation methods and partners of the frontline government in the inspection and acceptance of the superior government, and does not involve other fields.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding authors.

Author contributions

LL: Conceptualization, methodology, validation, writing—original draft, writing—editing, investigation, data curation. JW: Conceptualization, data curation. XH: Validation, data curation, investigation. YL: Methodology, data curation, investigation.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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TABLE A1 Univariate Necessity Analysis with “downward cooperation” (cooperating with the public) as the dependent variable.

Condition variable	Consistency	Coverage	Is it a necessary condition	Condition variable	Consistency	Coverage	Is it a necessary condition
Compatibility of tasks and resources (between 0 and 1)	0.48	0.57	No	~ Compatibility of tasks and resources (between 0 and 1)	0.52	0.57	No
The layout of task attributes	0.96	0.65	Yes	~ The layout of task attributes	0.04	0.14	No
The form of inspection and acceptance by superiors	0.91	0.67	Yes	~ The form of inspection and acceptance by superiors	0.12	0.27	No
Socio-economic development	0.68	0.94	No	~ Socio-economic development	0.32	0.31	No
History of cooperation with society	0.76	0.83	No	~ History of cooperation with society	0.24	0.29	No

TABLE A2 Univariate Necessity Analysis with “upward cooperation” (cooperating with the middle-level government) as the dependent variable.

Condition variable	Consistency	Coverage	Is it a necessary condition	Condition variable	Consistency	Coverage	Is it a necessary condition
Compatibility of tasks and resources (between 0 and 1)	0.43	0.51	No	~ Compatibility of tasks and resources (between 0 and 1)	0.57	0.62	No
The layout of task attributes	0.8	0.54	No	~ The layout of task attributes	0.2	0.71	No
The form of inspection and acceptance by superiors	0.64	0.48	No	~ The form of inspection and acceptance by superiors	0.36	0.82	No
Socio-economic development	0.28	0.39	No	~ Socio-economic development	0.72	0.69	No
History of cooperation with society	0.4	0.43	No	~ History of cooperation with society	0.6	0.71	No