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The selective centralization in decentralization: China's environmental vertical management reform with a case study in Hebei province

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ABSTRACT

This article examines why and how China's environmental vertical management reform has been carried out and how well it helps to improve the implementation of local policies. By applying the theoretical framework of 'dynamics, strategy, and capacities' in Hebei province as a case, the changes in the policy process have been fully revealed. The article concludes that the reform shows the character of selective centralization in decentralization, which facilitates the establishment of a degree of standardization in policy implementation. However, a new phenomenon of 'selective implementation' has been spotted which severely distorts the actual results of this reform.

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Introduction

The choice between a centralized or a decentralized approach has long been the core of discussion in exploring an approach for better environmental performance. The supporters of a decentralized approach state that the local governments are closer to the people and environmental issues, thus they have better information and local knowledge which allows the better tailoring of policies to local conditions (Andersson & Ostrom, 2008; Kostka & Hobbs, 2012; Litvack et al., 1998; Oates, 1972; Shin, 2017; Sigman, 2014; Weibust, 2009). On the opposite side, the supporters of a centralized approach argue that enforcement tensions between the central level and the periphery are the result of decentralization, which causes local protectionism and pose major obstacles to the implementation of environmental policies (Beeson, 2010; Beyer, 2006; Gilley, 2012; Lo, 2015; Oates, 2008; Rooij et al., 2017). Over recent years, China's environmental governance pattern has gone far beyond this traditional dichotomy and entered a phase of 'recentralization in decentralization'. This phase reflects the fact that although the general distribution of powers remains the same since 1978's decentralizing movement (Mertha, 2005), the power balance between central and subnational governments has gradually tipped toward the central government after conducting various reforms (Kostka & Nahm, 2017). Among all the reforms, the vertical management (VM) reform has been hailed as an essential move in realizing this transition. From the late 1990s, the first round of VM reform has been mainly carried out in the economic departments, which subsequently has essential impacts on

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the local implementation of environmental policies. More lately, the second round of VM reform was directly applied in the field of environment protection at the end of 2016.

The existing literature provides a productive investigation on the arrangement and influence of the first round of VM. However, noticeably absent is the analysis of the second round of environmental VM, especially on how it further reshapes the policy process based on the results of the first round of VM, and what challenges it has brought together with the improvements. This paper aims to bridge this gap. More specifically, it first reviews the relevant literature on China's previous institutional arrangements with the corresponding problems in the implementation of environmental policies and explains why the environmental VM reform was prompted as a second attempt. It then examines carefully on how the environmental VM reform has been carried out at both national and local levels. A case study of Hebei's water quality management is used as the open arena in which to observe the interaction of central–local governments in this reform. Meanwhile, a three-step analytical framework developed by Capano et al. (2015) is applied in the case study to identify whether and how well Hebei's adaptation of the central requirements has improved the implementation of water polices within its jurisdiction. Finally, the study concludes with a discussion of the influences of the environmental VM in the broader context of the Chinese institutional arrangement.

Literature review

The persistent implementation gaps in the context of China's 'fragmented authoritarianism'

As the implementation is a continuation of organizational arrangement (March, 1989), this section starts with a brief summary of the Chinese administrative structure. In the following text, the term 'local government' refers to a government and its functional departments conducting administrative work in specific regions at the sub-national level; the term 'central government' refers to the State Council and the term 'regional government' refers to a government and its functional departments at and below the county level.

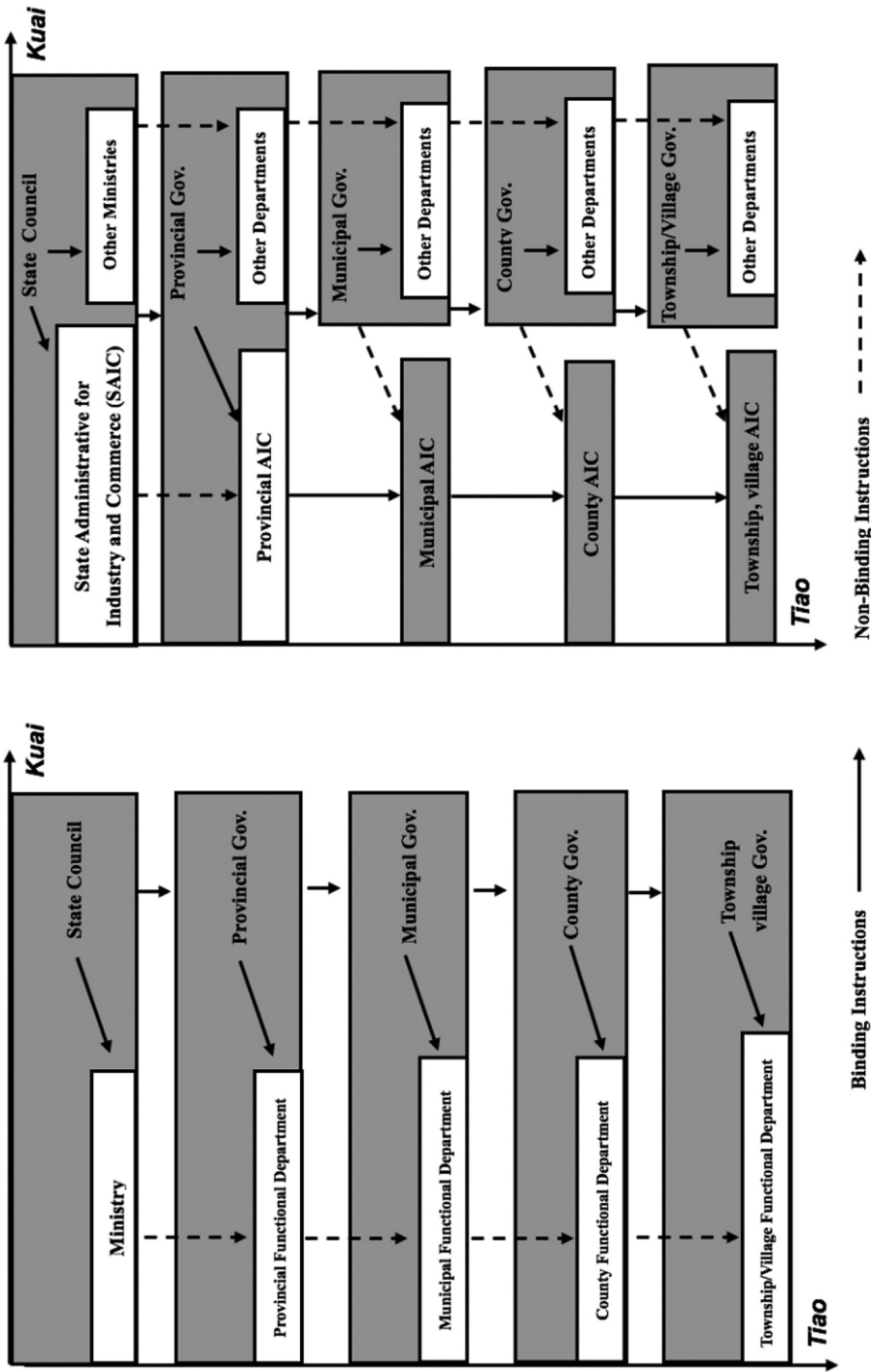
The structure of China's bureaucracy system is organized both vertically and horizontally. The vertical line refers to the relation between the local and central functional departments. Correspondingly, the horizontal line refers to the relation between local functional departments with their territorial government. In general, a functional department is both led by its superior department in the vertical line and the government at the same administrative level in the horizontal line, known as the structure of 'dual management'. Although China has normally been regarded as a highly centralized state, the 1987 decentralizing movement significantly threatened the primary role of the central government in this dual-management setting, which also laid the foundation for the debate on China's 'fragmented authoritarianism' and implementation gaps in the literature (Lieberthal & Lampton, 1992).

First conceptualized in 1988 and further revised in the following decades, 'fragmented authoritarianism' remains the most durable notion to capture how the outcome of policies implementation is conditioned on, and also interacted with, China's central–local organizational arrangement. This notion asserts the fragmentation of China's dual-management

system from three dimensions: first, with the control of personnel allocations, revenue collection and cadre recruitments that all remained in the horizontal line after 1978, functional departments were more likely to abide by the instructions from the horizontal line than those from the vertical line. Besides, with the decentralization of budgetary power, local territorial governments relied less on the central funds, which in turn empowered them to redevelop local preferences during the implementation, even though their preferences might deviate from the central demands (Brødsgaard, 2002; Harasymiw, 1969; Lieberthal, 1997). Moreover, unlike the Weberian bureaucracy system in which each level had a clearly defined sphere of competence in law (Weber, 1968), China's local governments at different levels showed vague boundaries in the division of responsibilities and decision-making procedures. This gave the governments at each level more space for bargaining when it came to the local enforcement of laws, regulations and policies, and has eventually made China's overall governance arrangement unique from the multilevel governance in many European countries (Dahl, 2017; Y. Zheng, 2007; Zhu & Zhang, 2005).

A typical implementation problem at that time was local protectionism, which means the green policies from the central government were compromised or displaced by local government's autonomy. Extensive examples can be given such as the local government protecting the key pollutant-discharging enterprises by deliberately lowering the mandatory environmental standards or intervening in law enforcement so as to promote the economy (Landry, 2008; Shi & Zhang, 2006; Stewart, 1977). To maintain the imperative political cohesion in the implementation process, the first round of VM reform was launched. Departments under this reform were removed from the leadership of the horizontal line and would be only led by its superior functional department in the vertical line. Meanwhile, the control of personnel allocations, revenue collection and cadre recruitments were shifted back to the vertical line to secure their instructions binding (Figure 1).

Overall, the first-round VM reform was quite effective in reducing the local protectionism, considering that it brought a more centralized and condensed structure to facilitate information exchanges and limit the influence of the principal-agent dilemma in a multilayer organization (Mirrlees, 1976; Tirole, 1986; Williamson, 1967). Despite this, it is noteworthy that, in general, this VM arrangement was only applied below the provincial level. Only several departments (General Administration of Customs, State Taxation Administration, etc.) were required to change their institutional structure throughout all levels. Hence, even in the sectors that underwent the first-round reform, the rule of the dual management has not been completely replaced. In other words, this reform has not addressed the fragmentation of China's governance arrangement. Rather, it increased it and created more uncertainty in policy implementation: on the one hand, as Mertha (2005) pointed out, the VM was de facto a 'soft centralization' and has made provincial governments the biggest gainer. In the central-provincial relation where the dual-management rules remained, Beijing undoubtedly needed to prepare additional measures to prevent the newly strengthened provincial government from becoming a severe obstacle in the local policy implementation; and, on the other hand, this VM reform could also be viewed as Beijing's first attempt to seek cooperation with lower levels of government. In this way, the provincial government was supposed to be promoted as an essential lever for effective policy implementation. Thus, it required Beijing to take further



The Institutional Arrangement after the First-round VM Reform (the AIC as a case)

The Institutional Arrangement before the First-round VM Reform (Dual Management)

Figure 1. Institutional rearrangement in the first-round vertical management (VM) reform with the Administrative for Industry and Commerce (AIC) as a case. Notes: Shaded area reflect the fact that these territorial governments (or function departments) are empowered to control the personnel/budgetary allocations, revenue collection, cadre recruitments and allocations. Unshaded areas reflect the fact that these function departments do not control the personnel/budgetary allocations, revenue collection, cadre recruitments and allocations. Whether the instruction is binding or non-binding mainly depends on whether the instructor is empowered to control the personnel/budgetary allocations, revenue collection, cadre recruitments and allocations. Source: Summarized by the author.

measures to motivate, to guide and to assist the provincial governments in managing the sub-provincial levels.

From the subsequent practice, it is not hard to find Beijing's responses to the first concern above. Command and control measures with market-based mechanisms were all applied to improve the endogenous supervision in the vertical line (Kostka, 2016). Furthermore, more political pluralization and social participation were involved in the policy process to enhance the exogenous supervision (Mertha, 2009). However, no follow-up action has been made regarding the second concern. Without more specific requirements for the authority and responsibility allocation below the provincial level, the provincial government could hardly assist Beijing in establishing a degree of standardization during the policy implementation. Instead, local governors at the lower level were of the opinion that their powers had been weakened after this VM reform, as their critical functional units have been 'taken away' and controlled at the higher level (Shen, 2009). For this reason, they tended to act slowly in coordination and support, which undoubtedly increased the difficulties for the function departments under the VM to fulfil their responsibilities individually. More seriously, when the overall task could not be achieved, it was always unclear who should be held accountable (Wang & Zheng, 2015). These problems were typical not only in the first-round VM, but also in the prelude of the second-round environmental VM reform, when some governments at the local level initiated pilot experiments with a similar arrangement as the previous VM. For example, on 9 August 2002, Shaanxi province was the first province to apply a VM reform at the municipal environmental bureaucracy. However, based on its actual results, this attempt was far from successful, as the ecology and environment bureaucracies (EEBs) found themselves to be moved 'from brothers to strangers', which led to the increased difficulties in communication and cooperation (Wang, 2018). Shenyang, another pioneer city, initially promoted a VM reform at the municipal and regional levels in 2008, but unexpectedly decided to revoke this decision and returned to the dual management after seven years. As the director of Shenyang EEB said, 'the VM reform could not achieve good participation in the environmental management, and it also undermined the previous arrangement of responsibilities' (Liu & Xu, 2016; Wang & Geng, 2015).

The environmental VM as a second try

'Never waste the opportunity offered by a good crisis,' as Niccolò Machiavelli once said (Del Lucchese, 2009). The imperfect performance identified in the first-round VM reform is precisely the starting point used by Beijing to revise the approach of the environmental VM. After being proposed at the fifth plenary session of the 18th Central Committee of the Communist Party of China (CPC), 'The Guidance on the Experiment of the Vertical Management of Environmental Monitoring, Inspection and Law Enforcement below the Provincial Level' (hereafter 'Central Guidance') was released in September 2016. In addition, 12 provincial-level administrative regions (provinces, provincial-level municipalities and autonomous zones) were required initially to take a one-year pilot to implement this Central Guidance. A three-year reform programme would then be followed to implement the environmental VM nationwide. By May 2018, 31 provincial-level administrative regions in China had initiated the environmental VM reform within their jurisdictions (Table 1).

Table 1. Implementation plans of the environmental vertical management (VM) in different provincial-level administrative regions.

Type ^a	Provincial-level administrative regions ^b
A (16)	<i>Hebei (2016.12), Jiangsu (2017.7), Shandong (2017.9), Jiangxi (2017.12)</i> <i>Hubei (2017.12), Shaanxi (2018.3), Tianjin (2018.10), Guangxi (2018.12)</i> <i>Nei Menggu (2019.1), Henan (2019.2), Sichuan (2019.3), Beijing (2019.3)</i> <i>Shanxi (2019.4), Liaoning (2019.4), Hunan (2019.4), Heilongjiang (2019.4)</i>
B (2)	<i>Chongqing (2016.12), Fujian (2017.12)</i>
C (13)	<i>Shanghai, Guangdong, Guizhou, Qinghai</i> <i>Jilin, Anhui, Hainan, Xinjiang</i> <i>Yunnan, Gansu, Xizang, Ningxia</i>

Notes: ^aType A: the provincial-level administrative region of this type has enacted a detailed implementation plan within its territory based on the Central Guidance, and the entire plan is open to the public online. Type B: the provincial-level administrative region of this type has enacted a detailed implementation plan within its territory based on the Central Guidance. However, the entire plan is not open to the public online. Some content of the implementation plan can be obtained by other means, such as official reports and the secondary literature. Type C: the provincial-level administrative region of this type has enacted a detailed implementation plan within its territory based on the Central Guidance. However, this implementation plan is not available online. The content of the implementation plan is not easily obtained by other means, such as official reports and the secondary literature.

^bEntries in italics: these provincial-level administrative regions are the first 12 pilot regions that carried out the environmental VM. Dates in parentheses indicate the time at which the implementation plan was carried out in the corresponding provincial-level administrative region. Source: Summarized by the author.

Regarding the environmental VM, the most apparent improvement is that Beijing has begun to actively assist the provincial government in managing the lower level governments. Various instructions related to the authority and the responsibly allocations below the provincial level have been included in the Central Guidance, which was the missing part in the first-round VM. At the same time, substantial regional variations can be noticed, not merely in the way of how prompt different provincial governments responded to the central government's 'green call', but also how each provincial government further elaborated and adapted their implementation plans in accordance with the central requirements. These differences and the subsequent impacts will be thoroughly analysed below.

This paper contributes to the current literature in several ways. First, instead of emphasizing specific problems of non-implementation or poor implementation, it unfolds the nuances of local implementation problems in a broader perspective of China's institutional transition (namely, the dual management, first-round VM reform and second-round environmental VM), and proposes a new concern on the rise of 'selective implementation'. Second, it provides a reconsideration on the landmark model of the 'fragmented authoritarianism' (Lieberthal, 1997; Lieberthal & Lampton, 1992) by analysing China's implementation of environmental policies. Although the main structure of this model stays appropriate by analysing China's policy process, some arguments on the 'fragmentation' formed by the insufficient supervisory capacity of the state, the weak coordination and the variant manoeuvres of the local governments need to be reviewed after the rearrangement of environmental VM. Moreover, the following discussion on the 'seemingly unitary yet internally complex' (R. Wang et al., 2018) pattern of China's local governments enriches the comparison between China's VM and the multilevel governance in many European countries, as they both show the

similarities and significant differences in the 'top-down' and 'bottom-up' approaches (Hjern & Porter, 1983; Sabatier, 1986; Sabatier & Mazmanian, 1979, 1980).

Method and theoretical framework

This article chooses Hebei province as a case study, for manifold reasons: first, Hebei was the first pilot province to adopt the environmental VM reform. It announced the implementation plan in December 2016 and has accomplished its reform from the provincial level to the county level by July 2018. Thus, Hebei's case can offer a complete picture of how the environmental VM has been implemented from the initial stage to a relatively completed stage at the local level. Second, Hebei's industrial structure has been dominated by the traditional capital-intensive factories which are mainly heavy polluters. Seven of China's top 10 polluted cities are located in Hebei, consuming more coal than all but one other province (B. Wang et al., 2018). In other words, it would be challenging to initiate such a reform with much local resistance. Given this context, it is worth examining how these specific conditions have been considered in Hebei's implementation plan. Third, from a geographical perspective, Hebei is located quite close to Beijing, which determines its vital role as the first pilot province to keep the Chinese capital clean. Fourth, compared with the other provinces, Hebei province disclosed its complete implementation plan together with relatively abundant information on how this reform has been enforced on the public. These constituted the premise and firm foundation for in-depth analysis. More importantly, the implementation plan of each province should meet the basic requirements of the Central Guidance. Therefore, the case study in Hebei province can reflect the overall performance of environmental VM reform to a certain extent. The case study will focus on water quality management, and it is mainly conducted based on desk research. The data primarily come from official government documents, information on official government websites, reports and interviews from mainstream media, etc.

Besides, the framework developed by Capano et al. (2015) will be applied in part of the case study. This framework has been frequently used in the existing literature to examine the policy process (Bali et al., 2019; Capano & Woo, 2018; Howlett, 2019; Wu et al., 2017) and governance modes (Ahlers et al., 2016, 2019; Bubak, 2018; Capano & Pritoni, 2019; Lange, 2017). It contains three specific aspects of analysing governance: dynamics, strategy and capacities. The *dynamics* part suggests that governance arrangements are equilibrium moments and often characterized by different organizational features and a mix of policy tools. The *strategy* part suggests that governance arrangements are the products of actions and interactions of policy actors with specific goals, and these reflect the ability of a government to alter governance arrangements and give them their dynamic character. The *capacities* part emphasizes how likely the governance arrangements are to be effective in resolving particular problems since simply designing or advocating a specific arrangement does not ensure its success. The application of the framework is innovative itself. Among the very limited existing literature involving the environmental VM (Kostka & Zhang, 2018; Ma, 2017; Yang, 2020; Zhao et al., 2020), none has fully analysed how the general guidance is formulated at the central level, how the general guidance is adapted in the local implantation plan, and how well the central requirements have been completed during the local practice. On the contrary, this three-step framework works as a heuristic lens to reveal the detailed picture of the environmental VM in

the ‘full policy circle’ (Anderson, 1975): not merely on how the environmental VM reform has been redesigned at the central level to rebalance the central–local relation in water quality management (*dynamics*), but also on how Hebei has shown the connections and variations with the Central Guidance in its implementation plan to adapt the local conditions (*strategy*), and on how well Hebei’s pilot experiment practically results in facilitating the implementation of water policies within its jurisdiction (*capacities*). This observation also sheds some light on the overall performance of China’s environmental VM.

Analysis: case study in Hebei’s water quality management

The implementation problems before the environmental VM: from number gaming to the verification programme

To further examine the way the environmental VM reshapes water quality management in Hebei, it is necessary to understand how China’s water quality management was operated before the environmental VM. This refers to the entire process of goal-setting, target allocation, local implementation and overall evaluation in water quality management. The process can be summarized as follows. To start, the State Council released a general Five-Year Plan for environmental protection which contained all the environmental goals with specific indicators and timelines. For example, the 13th Five-Year Plan required that more than 70% of water resources in seven key river basins should reach the status of level III or above by 2020 (State Council, 2016). This target of improving water quality would then be further calculated as the total reduction target of pollutant discharges. Once these national targets were set, the central government would negotiate with provincial governors to allocate these targets. As the responsibilities of government at different levels were ambiguously set out in laws (Congress, 2014), the allocation of provincial targets to the lower level governments within a province was also the subject of a negotiating process. After the process of target allocation, the local governors were primarily accountable for realizing the reduction targets and their performance became an essential part of the overall assessment. Before the environmental VM reform, the data on water quality were monitored and self-reported by the local governments which starts from the county level. In this way, the local cadres had an incentive to falsify data, since ‘satisfying data’ could enhance their career and promotion (Fuzeng, 2019; Ye et al., 2019). To improve the accuracy of data, the central government conducted a verification process based on documentary reviews and spot-checks to decide whether the data could be accepted for assessment, with a ‘zero tolerance’ towards data falsification (Chang, 2018). However, implementation problems, especially local protectionism, remained due to the resource-intensive process of verification, the lack of supervision and public participation, as well as the strong incentive for local cadres to overreport data. The local governments were motivated to turn a blind eye to the key pollutant-discharging enterprises and to interfere with the collection of reliable data in the meantime, so that they could meet the targets on paper without sacrificing the economy. Reports claiming that local officials were turning off monitoring systems, or even placing the monitoring sensor in clean bottled water instead of in a badly polluted river to fake data, were not rare in the state social media (Cai, 2016; Wang, 2017). The local EEBs themselves were also observed to lower the emission baseline

in order to facilitate the local government in meeting the reduction targets. Over time, the verification programme appeared to have been turned into a 'numbers game' as the target-setting central government did not exercise a high degree of control over the implementation and monitoring processes which formed 'the command-without-control situation' (Kostka, 2016) even after the first-round VM reform.

Dynamic perspective: the rearrangements in the Central Guidance to achieve a new equilibrium

This section starts from the basic requirements of the environmental VM in the Central Guidance, which should be highlighted in each province's implementation plan. Compared with the first-round VM, the fundamental rearrangements to solve the problems identified above are recasting the organizational structure, recasting the responsibilities allocation and recasting the accountability assignment (Figure 2).

Recasting the previous VM organizational structure

Under the first-round VM reform, the functional department that had been transferred to a higher level was no longer under the leadership of the local territorial government. However, according to the Central Guidance regarding the second-round environmental VM, municipal EEBs should remain under the municipal government's leadership, similar to the form of the dual management, but here the provincial EEBs play a critical role by controlling the personnel/budget allocation. In addition, the power of nominating and dismissing the leaders of the municipal EEBs stays by the leading Party member's group at the provincial EEBs instead of the local CPC organization department (Ma, 2017). This setting aims to prevent interference from the local governments, while keeping the link with them, so the local governments are still obliged to provide support and coordination after the environmental VM reform. The EEB at the county level, however, has been turned into a branch of the municipal EEB and is guided directly by the municipal EEB. Similarly, the power of nominating the leader of the county EEB branch has been transferred to the municipal EEB. As one of the local officers pointed out, 'after this reform the title of the EEB officer was no longer granted by the local government, so they would not be restricted and affected by the local cadres as they used to be' (Z. Zhang & Ji, 2020).

Recasting the previous VM responsibilities allocation

The most significant improvement of the environmental VM reform is the clarification of responsibilities in the vertical line. This change is most apparent by the phrase used in the Central Guidance, with the new distinction between the responsibilities of 'environmental inspection' and that of 'environmental law enforcement', which had been merged in the past. After the division, the 'environmental inspection' emphasizes the supervision over the local government's performance in environmental regulation (*duzheng*) and this responsibility has been selectively centralized to the provincial level. Provincial EEBs can delegate and empower the municipal and regional governments or relevant departments to supervise the implementation of environmental regulations. The 'environmental law enforcement' emphasizes the implementation of environmental regulation carried out by the environmental departments concerning local pollutant-discharging firms (*duqi*). This responsibility, however, has been decentralized to the municipal and county level (Xing,

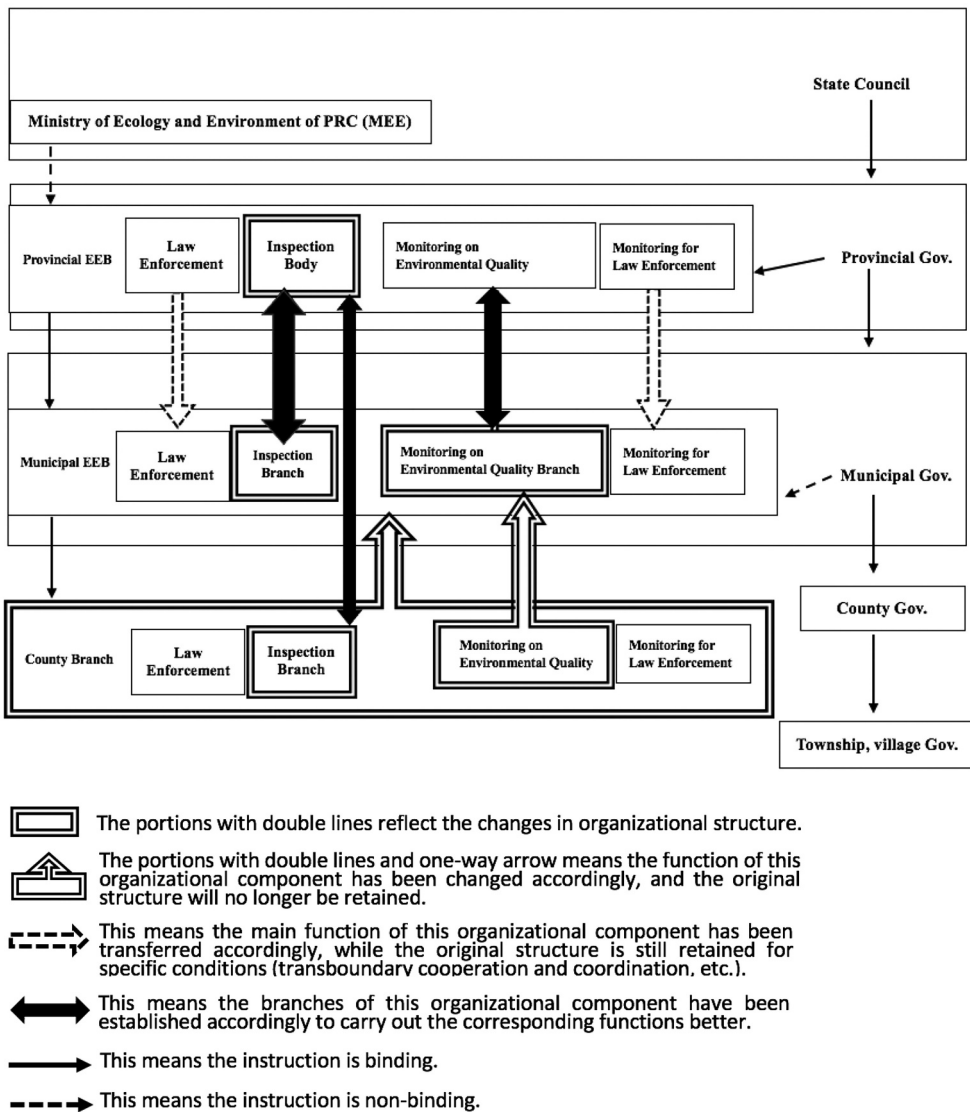


Figure 2. Institutional rearrangement in the second-round environmental vertical management (VM) reform (basic requirements in the Central Guidance).

Source: Summarized by the author.

2017). Furthermore, the previous responsibility of 'environmental monitoring' has been further divided now as the responsibility of 'monitoring on environmental quality' and the responsibility of 'monitoring for law enforcement'. The responsibility of 'monitoring on environmental quality' as well as the process of assessment have both been selectively centralized to the provincial level. This rearrangement aims to bring back control to the higher level, since recentralization may not yield improved environmental governance outcomes when the central government has poor information (Kostka & Nahm, 2017). On the contrary, the environmental VM decentralizes the responsibility of 'monitoring for law enforcement' to the municipal and county level, which aims to place the implementation

stage closer to the very local conditions. In this way, the selectively centralized responsibility of the inspection helps to reduce the 'blind spots' and corruption in China's multi-layer governance. In contrast, the further decentralized responsibility of law enforcement helps to enhance the environmental force, particularly at the regional level.

Recasting the previous VM accountabilities assignment

The Central Guidance endeavours to improve local compliance in implementing environmental policies also by redesigning the accountability assignment. More specifically, the CPC committees are included in the accountability system for the first time in order to guarantee environmental quality. This is known as the 'equal accountability of the Party and governmental organizations' (*dangzheng tongze*). In addition, the system of 'dual responsibility for one position' (*yigang shuangze*) has been later established to avoid the shifting of responsibility, as it requires that cadres of Party committees and governmental organs should be not only responsible for professional affairs, but also for actual environmental management and supervision relevant to the position they hold (Ma, 2017). Formerly, under the environmental law, the local Party was not assigned any concrete legal responsibility for environmental protection, but the Party's vision, interests and preferences dominated which policy areas were prioritized because the Party controlled the local cadres' performance evaluations, promotions and demotions (Ran, 2017). Therefore, this change in the environmental VM takes a big step forward by holding the decision-making body to account.

Strategy perspective: the continuations and variations in the local implementation plan as a response

In Hebei's implementation plan, the preceding key rearrangements have been elaborated upon and are consistent with the requirements of the Central Guidance. Moreover, some instructive approaches have also been adopted to fit with its local conditions. These continuations and variations are summarized in Table 2 and will be analysed in the following sections.

Variations in inspection and monitoring: the establishment of the ombudsman system and the monitoring centre

In Hebei's implementation plan, both the responsibilities of environmental inspection and monitoring on environmental quality have been divided and selectively centralized to the provincial level, as it has been required in the Central Guidance. What should be pointed out here is the establishment of the ombudsman system and the environmental monitoring centre as the local adaptation to carry out these responsibilities within Hebei province practically.

The ombudsman acts as a counterweight on behalf of the province or the state against the abuse of administrative power. In Hebei's case, an ombudsman centre and six ombudsman offices have been jointly established (Hebei EEB, 2017). The centre supervises the overall performance of the environmental regulation and undertakes assessments, while the offices are situated in the transboundary areas and are in charge of the regular inspection within their respective jurisdictions. With the delegation of powers from the provincial EEB, the ombudsmen can be accredited to the municipal and regional

Table 2. Panorama of Hebei's implementation plan (both the continuations and variations of the basic requirements in the Central Guidance).

	Main tasks	Organization
Responsibility of environmental inspection	<ul style="list-style-type: none"> Inspecting the overall performance on environmental regulation within the province Undertaking the verification of the total emission reduction Responsible for the regular inspection on Party Committees, governments and their EEBs at the municipal and regional levels when implementing environmental laws, policies and decisions within its jurisdiction Inspecting the functional departments when implementing environmental laws, regulations, policies and decisions Cooperating with the provincial Ombudsman Centre to carry out regular and specific inspections 	<ul style="list-style-type: none"> Agency within the provincial ecology and environment bureaucracies (EEBs) Agencies within the provincial EEB situated in cross-regional areas Ombudsman can be accredited to the municipal and regional levels
	<ul style="list-style-type: none"> Responsible for collecting, sorting and analysing environmental monitoring data within the province Undertaking technical assessments in transboundary environmental disputes within the province Facilitate the completion of the national comprehensive monitoring network promoted by the central government 	<ul style="list-style-type: none"> Agencies within the provincial EEB Eleven monitoring branches have been set up and empowered at the municipal level
Responsibility of environmental quality monitoring	<ul style="list-style-type: none"> Supervising corporations and implementing environmental laws, policies and decisions within its jurisdiction Responsible for the onsite supervision of pollution sources within the province Responsible for coordinating and supervising the transboundary environment-related tasks work within its jurisdiction 	<ul style="list-style-type: none"> Agencies within provincial EEB and municipal EEBs
	<ul style="list-style-type: none"> Providing instructions to the environmental team at the regional level Responsible for the prevention and control of atmospheric, water, soil and other environmental pollution Cooperating with the provincial and municipal EEBs (branch) to implement environmental laws, policies and decisions within its jurisdiction 	<ul style="list-style-type: none"> Specialized agencies at the county (township) level led directly by the corresponding government and Party Committee
Responsibility of environmental law enforcement		
Assignment of accountability		

Note: Shaded areas reflect the continuation part in Hebei's implementation plan; other areas reflect the variation part in Hebei's implementation plan.
 Source: Summarized by the author.

levels for better environmental regulation (Hebei CPC, & Government, 2016). Meanwhile, the environmental monitoring centre at the province level and 11 monitoring branches at the municipal level have been established to collect and analyse data within Hebei province (Chen, 2017; Hebei EEB, 2017). They have also facilitated the completion of the national comprehensive monitoring network promoted by the central government, through which the data from various provincial monitoring systems can be mutually interconnected and verified at the central level (MEE, 2016; State Council, 2015b). In comparison with the situation discussed above, the water quality in the main river basins within Hebei is now monitored directly by Hebei provincial EEB with the ultimate supervision of the Ministry of Ecology and Environment (MEE), and the status of water quality will be regularly announced to the public (MEE, 2016, 2017, 2018b; State Council, 2016). In addition, every river > 500 m in length and each lake, reservoir and pond > 5000 m² have been coded, and the public is able to access water quality information online (Wang & Gao, 2017). These changes in monitoring methods and better transparency help to reduce the adverse effects of the previous 'self-reporting' process, during which the local government and EEBs were 'both the athletes and referees' (Chang, 2016). Consequently, inappropriate interventions by the local governments are now decreasing and this facilitates the higher decision-makers in obtaining more credible, accurate and comprehensive information and in having more effective control over water quality management.

Variations in law enforcement: the establishment of the environmental protection team

According to the requirements of the Central Guidance, the responsibility of environmental law enforcement has been further decentralized to the municipal and county levels in Hebei province. This means that the environmental forces at and below the municipal level are supposed to shoulder the main tasks of monitoring for environmental law enforcement, such as spotting pollutant discharge and taking corresponding actions, while the bureaucrats at the provincial level should mainly focus on solving transboundary environmental disputes. A problematic situation here is that the EEB at the county level has been turned into the branch of the municipal EEB during the second-round environmental VM, while the Central Guidance mentions nothing about by who and in which way the responsibility of law enforcement at the regional level should be carried out.

From this perspective, Hebei province shows local adaptation again in its institutional organization. Besides forming the agency of law enforcement within the provincial and municipal EEBs, Hebei has innovatively set an environmental protection team at the regional level to maintain the environmental force at the lowest level of the hierarchy. This team is directly guided by the government and its corresponding Party Committee at the county level, as they are both responsible for preventing environmental pollution and cooperating with the provincial and municipal EEBs to implement environmental laws, policies and decisions. The establishment of the environmental team also limits local governments in their use of the 'disabled man' concept as an excuse to shirk their responsibilities, since they might otherwise choose to regard themselves as people without eyes (monitoring) and legs (law enforcement) after the environmental VM (Zhang & Zhang, 2018).

Continuations and variations in accountabilities assignment

Consistent with the requirements of the Central Guidance, the Party Committee and the government at each level in Hebei province are all held accountable for improving water quality. This purpose is guaranteed by the veto apparatus promoted at the national level, which means the overall performance of the local cadres in realizing environmental targets has been assigned as a priority with veto power in their evaluation, and their failures in environmental performance will unilaterally cancel out all positive work performance in other fields (X. Zhang, 2017). Similarly, any falsification or interference with water quality monitoring data will trigger the veto apparatus in the provincial assessments (State Council, 2015a). In addition, local cadres who used to be held accountable for their actions only as long as they occupied a position are now subject to the lifelong accountability for any environmental damage caused by his or her decisions (Gao & Chen, 2015). This change helps to remove local cadres' negative incentive of pursuing economic growth at the expense of water quality during their terms period for the promotion. In summary, although there is no detailed requirement in the Central Guidance on how to reassign accountabilities to the decision-makers (in general, the local cadres in chief) within the province, other synchronous reforms promoted nationwide by the central government indeed provide Hebei with clear instructions on how to elaborate these requirements in its implementation plan.

However, it is not quite the case for the accountabilities assignment among different environmentally related departments, and many flexibilities have been left to Hebei for local adaption. An essential approach that is worth discussing in Hebei's implementation plan is the role of the 'list' in adjusting various relations in its environmental regulation: for the relations between different departments, the 'List of Authority and Responsibility' (*quanli qingdan*) has been disclosed to enhance multi-sector coordination and facilitate determining accountability 'to whom' and 'for what' in complex environmental issues (Hebei IOC, 2019); for the relations between environmental bureaucracy and the regulated parties, both the 'Negative Environmental Credit List' and the 'Positive Environmental Credit List' are disclosed termly by Hebei EEB. The classification of these two types of lists is based on the enterprises' performance in environmental regulation in the previous quarter. In this way, the environmental bureaucracy has the discretionary power to impose relatively stricter supervision and penalty on the enterprises on the Negative List and, on the contrary, impose relatively loose supervision on the enterprises on the Positive List (Hebei EEB, 2020). This innovative approach helps to detect whether the administrative agencies fail to fulfil their responsibilities or misuse their powers in specific situations, thus facilitating determining accountability in practice.

Capacity perspective: the overstretched regional government in the new central-local relation

The previous *strategy* perspective mainly focuses on the design of Hebei's implementation plan in elaborating and extending the requirements of the Central Guidance to adapt its local conditions, while this *capacity* part emphasizes the practical result of this reform in Hebei.

Hebei's pilot experiment since 2016 has resulted in many achievements, as can be seen from the government's annual report and lots of domestic news: for regulating

enterprises, Hebei's environmental VM reform has managed to 'open the door which could not be opened before', which means the restrictions of local protectionism have been reduced and the environment bureaucracy now can effectively supervise the key pollutant-discharging enterprises within its jurisdiction (M. Zhang, 2017). In 2017 and 2018, 108,000 and 125,000 violator firms have been regulated by Hebei EEB, respectively. To supervise the local governments, the environmental ombudsman office of Hebei had handed over 969 environmental issues to the provincial Party Committee and government and 1632 people in the province had been held accountable because of their weak performance in environmental protection by the end of 2017 (Hebei Government, 2017, 2018, 2019b, 2020). However, the reliability of this remarkable progress requires further examination, as the Central Leading Group for Inspection has found that pollution is still serious in Hebei province, and some regions in the province have not implemented the central government's environmental policy in reality. For example, the plan for upgrading the sewage treatment network in Wuji county has not been completed as was required. Thus, the wastewater has not been appropriately disposed of and has resulted in a high concentration of pollutants in the Hutuo River. Furthermore, some officials of Huanghua city and Jixian county were accused of putting chemical reagents into the river to sharply change the real-time monitoring data and cover up pollution problems during the central government's inspection (MEE, 2018a, 2020).

These situations inevitably cause suspicion about the actual results of Hebei's pilot reform and the overall effect of China's environmental VM reform. Through a closer examination, the government's limited competence at the regional level becomes an apparent problem that restricts the practical positive influences of this reform. The limited competence reflects in both quantity and quality aspects. The quantity aspect refers to the lack of personnel; to be more precise, the lack of personnel within the *bianzhi* system. A direct translation of the term *bianzhi* would be 'the establishment', and it refers to the number of established posts in a unit, office or organization (Brødsgaard, 2002). The ultimate aim of setting up a *bianzhi* system is to cut administrative personnel, to create a leaner, more efficient public sector, and also to save on state administrative budget expenditure (Brødsgaard, 2002). When the quantity of personnel appointments and budgetary outlays at the national level have been confirmed by the Institutional Organization Commission (IOC) of the state, the number of *bianzhi* has been fixed and will be distributed to each IOC at the provincial level. Under the dual management, it is the provincial IOC that is empowered to allocate this total figure, based on its preferences, to the various departments, and this procedure is repeated all the way down to the county level (Mertha, 2005). For the functional departments under the VM system below the provincial level, the provincial IOC needs to allocate a fixed number of personnel to the specific provincial functional departments, and the power of allocating this aggregate number has been transferred to this department as well. Since the personnel numbers within the *bianzhi* system are mandatorily fixed by policies, the departments at the local level, especially at the regional level, tend to exceed their prescribed numbers in various quasi-legal or illegal ways when there is lots of work but an insufficient workforce. A representative example here is the pervasive involvement of contract-based staff in environmental regulation: before the environmental VM, due to the limits of *bianzhi*, many staff in the law enforcement agency and even those in some local EEBs were not the civil servants of the administrative organ, but were contract-based employees in the

service organizations (*shiye danwei*). This difference determined that these contract-based staff in fact did not have administrative powers over others during the implementation of environmental regulation (Tao-Chiu & Perry, 2001). Although some administrative powers could be delegated, the authority, as well as the legitimacy of these staff in enforcing the laws and policies was still restricted (He, 2019). After this reform in 2016, according to the Central Guideline, the environment-related personnel who operated outside the formal bureaucracy system should be gradually transferred and be integrated. In addition, this transfer should be made within the fixed *bianzhi* figure in order to remain consistent with the goal of simplifying and downsizing the administrative organization's scale. This arrangement theoretically streamlines the administrative procedures and improves the feasibility of the reform, yet it is problematic in practice. In Hebei's case, two primary documents have been declared to further facilitate these personnel and budget transfers (Hebei CPC & Government, 2017a, 2017b), while these two documents only focus on establishing requirements at the province level and say nothing about how these transfers could be realized at and below the municipal level. This means that at the regional level, there are no practical measures taken to resolve the dilemma between the limitation of the contract-based staff and the shortage of staff. Besides the quantity aspect, the quality aspect refers to the lack of professions. Numerous staff who are responsible for environmental law enforcement are not well equipped and trained, and this problem is more prominent at the regional level. Although Hebei has tried to make improvements from the lowest level of the hierarchy by setting up the specialized environmental protection teams at the county, township and even district levels and supplying them with office space and necessary equipment, the professionalism of this law enforcement force is still far from satisfactory (Song, 2018). Due to the shortage of personnel, some staff who had never been engaged in environment-related work have been shifted into the team and start working immediately, which makes the professions of the frontline officials a matter of public concern (H. Zheng, 2017).

These long-standing difficulties, faced by the regional government in Hebei and to a certain extent faced by all the regional governments nationwide, have not been settled in the environmental VM. Rather, the government at the regional level became more overloaded in facing these concerns after the reform: compared with the situation before the environmental VM, the regional government now is confronted with considerably more tasks that might be far beyond what could be considered reasonable with its competence. Moreover, the regional government now shoulders heavier responsibilities. Once something goes wrong, it is always the scapegoat, regardless of whether it is capable of handling these complicated, environment-related issues (Fang, 2016). In addition, the competence of the central and provincial governments has been substantially strengthened with the selective centralization in the aspects of monitoring and inspecting, which leaves less discretionary power to the distant regional government to fiddle with the central government's instructions during policies implementation (Kassinis & Vafeas, 2006). In this way, the previous implementation problems caused by the asymmetry information in the dual management and first-round VM management have now been greatly reduced, while the overburdened regional government poses a new challenge after the rearrangements of the second-round environmental VM.

Reconsidering the implementation problems: selective implementation as a new way for the regional government to survive under the tension

In the face of such pressure, the regional government and its departments still have some discretionary power to fine-tune the central government's green policies by selectively implementing them in a profitable way. In other words, they are more likely to put vast amounts of energy and financial resources into where the outcomes are easily calculated and better combined with economic benefits. This approach is typical in Hebei's pilot reform. For example, in improving water quality, local governments have relied heavily on enforcing administrative penalties to restrict pollution. In 2017, 22,000 cases related to the administrative penalties on environmental pollution were filed in Hebei province, with the proposed fines amounting to approximately around US\$170 million (Zhou & Zhang, 2018). In 2018, these two figures were 20,963 cases and approximately US\$212 million. In both years, Hebei ranked third and second, respectively, among all the other provinces in the total amount of cases and penalties (Zhou & Zhang, 2019). In Tangshan city within Hebei province, the proposed administrative penalties on environmental pollution reached over US\$46.4 million, ranking first in all the county-level cities in 2018 (Wang, 2019). Additionally, some pioneering approaches have also been applied to Hebei's practice, such as the 'double-penalty system' in striking environmental violations. This system means that if the enterprises have been fined by the provincial or municipal EEBs, the territorial governments where the enterprises are located will also be fined. The same amount of fines will be deducted from the government's fiscal allocation for the next year, and these forfeit will then be used by the central government for environmentally related purposes (Liu, 2018). The 'tournament system' has also been used in Hebei's water quality management by comparing the indicators of water quality in 11 cities across the province every month. The top and last three cities in the ranking list will receive financial rewards and penalties respectively up to US\$458,000 (Hebei Government, 2019a).

The increasing number of administrative penalties has, in some way, been regarded as the best manifestation of the government's active participation in environmental regulation. Meanwhile, the fines, fees and other payments collected from the violators directly provide the local enforcement agencies and teams with revenues which would be impossible to secure from the regular budget allocation. Hence, a new problem has been created, as the local governments, especially the overburdened regional governments, prefer to selectively apply the green policies whose results can be immediately observed, and repeatedly implement them in the most exploitative way. However, whether the extent, frequency and cost of these administrative measures are reasonable receive less consideration. For example, in order to meet the environmental requirements during the central or provincial inspection, all factories are closed during a specific period without considering the practical differences between them (Zhuang & Hu, 2021). Even though the 'Negative Environmental Credit List' and the 'Positive Environmental Credit List' have been promulgated to put limitations on the administrative power, this kind of a one-size-fits-all approach is still pervasive during the implementation stage and has been criticized by the central government for violating the proportionality principle.

Conclusions

As one of China's paramount reforms to balance the central–local relations, the environmental VM makes a fundamental change in the institutional arrangement and thus significantly influences the direction of China's environmental regulation. Based on the preceding analyses, this article starts from the field of water quality management and argues that China's overall environmental VM shows the character of 'selective centralization in decentralization': the responsibilities of inspection and water quality monitoring have been centralized at the provincial level, while the main tasks of the implementation and enforcement of policies have been decentralized to the municipal and regional levels.

With a more precise division of responsibilities at each level of governments (vertical line), the central and provincial governments can accumulate more reliable information directly and independently, which is essential in order to supervise the implementation and provide evidence for evaluations. In the meantime, officers at the municipal and regional levels are transforming in the role in environmental regulation from the 'all-inclusive participators' to specialized 'functional decentralized implementors'. This transition does not mean that local flexibilities are not permitted during the top-down implementation of policies. Instead, these frontline officers are more suitable to take bottom-up adaptations in response to local demands because they are closer to the local communities and circumstances (Litvack et al., 1998). To conclude, the environmental VM further standardizes the implementation process and leaves less manipulating space for the local government to sabotage the state's original intentions in the context of China's fragmented organizational setting (Marks, 2010; R. Y. Wang et al., 2018). This used to be the prevalent problem with dual management.

In contrast to the selective centralization of responsibilities in the vertical line, the accountability for environmental regulation has not been assigned to the corresponding higher level, but is still firmly remained on every horizontal line with broader stakeholders involved: the local party committee is explicitly required to hold equal accountability with the local territorial government for the first time since the CCP came to power. The purpose of this step is, amongst others, to compel local governors to facilitate and coordinate when addressing complex environmental issues (transboundary pollutions, etc.) instead of acting slowly after the environmental VM reform. This used to be the prevalent problem after the first-round VM reform.

Therefore, it is fair to state that the environmental VM reform contributes to reduce the previous implementation problems and establish a degree of standardization in local policy implementation. More importantly, it made the provincial government a vital collaborator rather than Beijing's competitor in managing the sub-provincial levels. This reform indeed brings the powerful central government back to central–local relations, and brings the state nearer to the way of 'command with control', but an apparent missing part in this reform is providing better incentives for the local participators. Although they are now more actively engaged in environmental regulation, they are engaged in a 'brutal' way: with stricter accountability and tighter central control, local participators, especially the regional governments with insufficient personnel and professionalism, are inclined to selectively obey the state's policies, which can immediately yield measurable outcomes, and repeatedly implement them in the most exploitative way (rely heavily on administrative penalties, etc.). This pattern of 'selective implementation',

on the one hand, is a practical tactic for local governments to survive under such pressure, while, on the other, it might violate the principle of proportionality and jeopardize the legitimacy of local government in the implementation of policies and law enforcement.

Undoubtedly, the environmental VM is a step in the right direction. However, the fragmentation of China's governance arrangement and the uncertainty in policy implementation still exist in the coexistence of the dual management and the VM. More research is needed if promised improvements are to be achieved, and one of the further valuable examinations is whether and how China's 'selective centralization in decentralization' can work as a coalition framework to synthesize both the 'top-down' and 'bottom-up' approaches, and eventually increase the systemic adaptiveness of the state.

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