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Xiang, Chen and Lo, Alex ORCID

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Authoritarian environmentalism 2.0: An incremental transition of environmental governance in China

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Chen Xiang

Shanghai Jiao Tong University, China

Harvard University, USA

Alex Y Lo 

York St John University, UK

Abstract

The recent policy practice in China has shown nuanced differences from previous accounts of authoritarian environmentalism. The emerging discourse of green transformation shows dual tendencies for (re-)centralizing and decentralizing environmental institutions. Our understanding of authoritarian environmentalism in China requires an update. We review the recent policy practice and the scholarly literature to advance a modified framework of authoritarian environmentalism. Using the Central Environmental Inspection Teams and emissions trading schemes as examples, we highlight the coordinated practice of strengthening state control while strategically using mass mobilization and market mechanisms. We argue that non-state actors and bottom-up tools are being absorbed into the politics of (re-)centralization. The centralizing state accommodates a limited range of participatory and decentralizing elements in an attempt to modernize the governance system. Our modified framework recognizes the mutually reinforcing authoritarian and liberal elements, and sheds light on the broader trends of environmental governance in China.

Keywords

Authoritarian environmentalism, environmental governance, environment regulation, market mechanism, China

Introduction

In China, state control over the economy, society, and politics has strengthened since Xi Jinping assumed office at the end of 2012. This transformation has extended to the realm of environmental

Corresponding author:

Alex Y Lo, York Business School, York St John University, Lord Mayor's Walk, York, YO31 7EX, UK.

Email: a.lo@yorksj.ac.uk

governance, where some scholars suggest a reinforcement of authoritarian environmentalism (AE) in the country (Li and Shapiro, 2020; Lo, 2021). Parallel to this tendency is the state's advocacy for green transformation, which is framed in terms of 'eco-civilization' (Hansen et al., 2018). Such a green transformation has emerged from a stronger and bigger authoritarian regime. This calls for a more balanced account of our 'understandable enthusiasm for China's green transformation' (Kostka and Zhang, 2018: 778; Chen and Lees, 2016).

Debates surrounding AE in China have traditionally revolved around the state apparatus and its top-down controls. Nonetheless, alternative theories have begun to put a stronger emphasis on the emerging role of civil society and the public in areas such as information disclosure and influencing the government's decision-making (Cai, 2020; Cai et al., 2022; O'Brien, 2008). In fact, a report by the Chinese Academy of Social Sciences reveals that environmental pollution has contributed to half of the 'mass incidents' in China that attracted over 10,000 participants between 2000 and 2013 (Steinhardt and Wu, 2016). This indicates a relatively higher level of public engagement, a characteristic traditionally associated with democratic environmentalism. Another example is the strongest-ever support for the use of market-based instruments, such as emission trading and green finance. These perspectives and empirical evidence, often associated with participatory or deliberative authoritarianism (He and Warren, 2011; Teets, 2013), have driven scholarly debates about the potential for state-society synergies or 'co-production' in China's environmental governance (Goron and Bolsover, 2020). These recent developments suggest a potential shift in the course of AE.

This article aims to review and re-assess the nature and functioning of AE in China. We ask 'how authoritarian is the current form of environmental governance in China?' We argue that the strengthening of AE in China is associated with an increasing use of controlled participatory and decentralized tools. Despite retaining and strengthening its control over environmental policy systems (Bruun, 2020; Lo, 2021), the state encourages large-scale grassroots tip-offs and adopts market-based instruments to enhance public trust and legitimacy in environmental governance. The state's strategic engagement with the public and the market is incremental, but represents a perverse process of co-evolution between authoritarian and (partial) liberal elements of environmentalism in China. We argue that the governance regime is developmental: a strong and powerful state bureaucracy is primarily responsible for modernizing environmental governance systems and introducing a limited range of liberal elements from the top down. Understanding this transition process and its manifestations is essential to conceptualizing the evolution of environmental governance and predicting the ways forward.

In this paper, we contribute to the refreshing of the AE discourse by updating the AE framework to what we call 'AE 2.0.' This new framework recognizes the co-evolution of authoritarian and liberal elements, and the political absorption of the latter ones. Based on the latest developments in the past decade, it offers new insights into the incremental changes in China's environmental governance and the ways forward. The framework aims to improve our understanding about the reinforcement of both authoritarian and liberal elements in a predominantly authoritarian setting and shed light on broader trends of environmental governance in China and beyond. It is supported by context-specific cases derived from recent shifts in China's environmental practices.

This paper includes an extended literature review on AE and two case studies. The case studies concern two representative policy tools – Central Environmental Inspection Teams (CEITs) and Emissions Trading Schemes (ETSs), and are used to show the ongoing changes and the direction of China's AE since 2012. Our paper is structured as follows. In Section 2, we provide a brief overview of environmental governance in China, highlighting internal struggles and the novel aspects of AE 2.0. We then delve into two case studies under the framework of AE 2.0: CEITs are explored in Section 3, and the ETS is examined in Section 4. In Section 5, we discuss the implications of AE

2.0 in China's environmental governance and its contribution to the broader literature on environmental governance.

Authoritarian environmentalism in China

Negotiating the authoritarian state

Authoritarian environmentalism has emerged as a critical discourse that questions the environmental practices of Western democracies, which put emphasis on public participation and the consideration of public perceptions of environmental threats in the policy-making process (Beeson, 2010; Gverdtsiteli, 2023). The theoretical foundations of AE were first developed by Heilbroner (1974: 38) to justify population control, emphasizing the need for authoritarian and centralized regimes to exercise strong regulatory controls over the use of environmental resources. Despite ongoing debates in recent decades, the first-order feature concerning AE remains the institutionalized blockage of accountability (Li and Zinda, 2023: 115). According to Pepinsky (2020: 1093), if a regime attempts to deal with environmental issues through 'procedures for allocating political authority within a defined community,' it can 'override opposition to unpopular decisions that force changes in how people live and constrain the use of materials and energy.' Decisive and fast actions usually follow once the decision is made.

Following the rise of China in Asia and the world, scholarly debates on the role of democratic government in environmental governance have found new arguments and evidence. According to Gilley (2012: 288), the AE in China has shown two characteristics. Firstly, it is manifest as a public policy process that is dominated by 'a relatively autonomous central state, affording little or no role for social actors or their representatives.' It is non-participatory and does not encourage environmental campaigns, civil litigation, and bottom-up activism that are not mobilized by the state. Secondly, the authoritarian regime of China pursues environmental outcomes by adopting strict command-and-control measures and delegating responsibilities in a top-down manner.

Over the past decade, there has been a tendency towards increased centralization and managerialism within China's environmental management. Emerging studies suggest that authoritarian environmentalism in China is characterized by the re-centralization of state power, heightened political-administrative intervention, and a strong emphasis on efficiency through the use of quantitative targets and internal accountability systems (Chen and Lees, 2018; Hu, 2020; Li, 2019; Li et al., 2019). The authoritarian regime attempts to improve environmental performance within a relatively short timeframe by concentrating power on the central authorities and mandating local governments to meet environmental targets. Non-compliance or poor performance could lead to the demise of local cadres (Han, 2017; Li et al., 2019). Chen and Lees (2018: 226) conclude that the current administration 'intends to strengthen and extend the hierarchical command and control mechanisms and consolidate the powers of environmental and urban planning at the top of the chain of command.'

A close examination of China's AE reveals nuanced differences and contradictions between and within existing theoretical accounts. On the one hand, China's AE presents an imbalance of power between state and non-state actors. The core features are a dominant party-state exercising control over a mono-centric and non-participatory policy process and a regulatory regime heavily reliant on command-and-control measures, which have gone limited checks by a weak environmental civil society (Gilley, 2012; Shen and Jiang, 2021). Li and Zinda (2023) argue that state action on environmental management in China has grown more illiberal and increased authoritarian since 2012.

However, this prevailing scholarly discourse often fails to recognize the growing presence of decentralized policy-making processes, the changing dynamics between the state and the public,

and the strategic involvement of environmental NGOs (ENGOs). For example, Wang and Lo (2022) carefully examined how the first-ever domestic ENGO – Friends of Nature – plays an important regulatory role and serves as a technical expert that assists the Party in solving environmental problems in China. Alternative theoretical accounts recognize the modernized and alternative policy-making processes, management styles, and institutional arrangements emerging in the past two decades. These perspectives find evidence from processes of public consultation (Teets, 2013; Wang and Lo, 2022), decentralization and fragmentation (Mertha, 2009; Xu, 2011), networked and collaborative governance (Chen and Lo, 2021; Schröder, 2011), business engagement (Lo and Chen, 2020; Shen, 2015, 2017), bargaining (Lee and Zhang, 2013), and public deliberation (He, 2006; He and Warren, 2011; Zhu and Chertow, 2019). Despite the centralizing tendency, some scholars contend that the regime can tolerate certain liberal features of policy development and implementation at the local level.

For instance, Lo (2015) examines China's low-carbon policy and argues that the central government's failure to effectively control local actors has resulted in a de facto neoliberal environmentalism. According to Zinda (2023), despite becoming more authoritarian, environmental governance practices in China have undergone a process of variation and evolution, moving away from rigidity and direct coercion towards constrained flexibility and responsive approaches (Marquis and Bird, 2018; Qiaoan and Teets, 2020). Other scholars have described the AE in China as fragmented and symbolic, emphasizing an implementation gap where the central government has struggled to motivate local officials to rigorously enforce environmental policies. This challenge often stems from the decentralized management system and potential collusion between local regulators and polluters (Beyer, 2006; Lieberthal, 1997; Ran, 2013; Van Rooij et al., 2014). Therefore, the clear tendency for increasing centralization and managerialism runs parallel with slower, incremental processes of decentralization, participation, and fragmentation at the local level.

In fact, the discourse of AE, which encompasses not only China's AE but also its manifestations in various contexts, presents a complex and often contradictory picture when applied to real-life governance. As stated by Li and Zinda (2023: 111), AE demonstrates its versatility across various specific contexts in East Asia, and 'it is monolithic, top-down, and uncompromising. It is also incomplete, negotiated, and performative. It solves environmental problems, transforms administration, and addresses public concerns. It leaves environmental goals unmet, entrenches fragmented and unresponsive bureaucracies, and represses citizens.' Given this multifaceted and fluid nature, a comprehensive re-evaluation of China's AE within its recent developments is imperative.

Authoritarian environmentalism 2.0

These co-existing tendencies require a rethinking of the conventional framing of China as a managerial state practicing authoritarianism in the environmental realm. Three broad tendencies are worth further discussion. Undoubtedly, the primary tendency is the strengthening of state power, which is reflected in recent re-centralized institutional arrangements. The increasing emphasis on environmental protection as a national priority and the attempts to streamline public management have resulted in a reinforcement of central government control over environmental policies (Kostka and Zhang, 2018; Lo, 2020, 2021). One example is the establishment of the Ministry of Ecology and Environment (MEE) in 2018. This new ministry has absorbed the regulatory responsibilities of a few other ministries, including soil and subsurface pollution control, marine protection, urban and rural pollutant discharge, and carbon emissions control (Wang, 2018; Xie, 2020). Additionally, the MEE has taken over the Climate Change Department (CCD), which is responsible for drafting major climate policy programs and strategies, from the National Development and Reform Commission (NDRC). Shen and Jiang (2021: 59) argue that, with this consolidation of policy responsibility and regulatory power, the MEE has now become the foremost central authority

overseeing environmental resources and policy in China's environmental governance history. At the local level, the Provincial Department of Ecology and Environment (PDEE) has gained full authority to nominate directors of local environmental agencies, a move aimed at filling the previous implementation gap. Party discipline is more used to hold protectionist local government leaders accountable. Despite the persistence of implementation flexibility at the local level, these changes indicate the determination of the central government to address institutional fragmentation and curtail local autonomy in environmental policy implementation (Lo, 2024; Ma, 2017; Xu, 2022).

The secondary tendency entails a strategic use of markets in environmental projects, representing a modest departure from the conventional framing of authoritarian governance. The Chinese government increasingly recognizes the role of market-based instruments, bottom-up initiatives, and nudging policies, employing them strategically to strengthen authoritarian rule. For example, the centralized state has become more receptive to the instrumental use of financial and economic policy tools, such as green bonds and carbon pricing policies, for achieving environmental goals. In 2018, the Chinese government introduced an incentive-based tool and released its first Environmental Protection Tax Law, which is also the first special tax law on environmental protection in China (Cai et al., 2022). Moreover, a pilot program for green bonds was initiated in 2016 to support nine pilot cities in China to implement ambitious green financial reforms (Chen and Zhao, 2021). By the end of 2021, China's green bonds market had reached a cumulative value of US\$200 billion, making it the world's second-largest market of this kind (Lin and Hong, 2022). Furthermore, in 2021, following 8 years of policy experimentation, China launched its national carbon market in the power sector, covering over 40% of the nation's carbon emissions, thereby surpassing the European Union Emission Trading Scheme (EU ETS) to become the world's largest carbon trading market (Liao and Yao, 2022). These policy programs and instruments simultaneously mobilize and empower private sector actors, enabling them to assume a greater role in environmental policy implementation and governance.

The third tendency is a rise in controlled opportunities for public participation. Scholars such as Gilley (2012) describe the limited opportunities for public participation, a core element of democratic environmentalism, as one of the defining features of the AE in China. Public participation in China is often seen as limited to insignificant public policy issues and manifests as symbolic political gestures, rather than consequential opportunities for citizens to influence environmental policy (Lo, 2010; Xie, 2016). However, bottom-up initiatives need the mass public. In recent years, the Chinese state has incrementally enabled the public to influence environmental policy-making by encouraging local residents to report cases of environmental violations, thereby holding polluters accountable. Despite its selective response to public opinions, the central government actively seeks citizens' feedback, promotes mass reporting channels, and tolerates some pressures for change. One noteworthy example is the 12,369 pollution tip-off platform, a nationally endorsed initiative. This platform operates as an official national hotline (accessible by dialing 12,369), and encourages citizens across China to report suspected violations of official pollution standards and policies. Leveraging the popular use of social media among Chinese citizens, the MEE mandated all local Environmental Protection Agencies (EPAs) to establish official WeChat accounts to facilitate direct communication between the public and local EPAs. By the end of 2017, all local EPAs in China's 338 prefectural cities had set up official WeChat accounts for environmental violation reporting. From 2018 to 2021, the 12,369 hotline received a total of 1,822,611 reports, 46.76% of which were submitted via WeChat and the rest came through hotlines and other channels (MEE, 2021).

NGOs are increasingly engaged in collaborative regulatory efforts with the government, encompassing activities such as government purchasing of services from NGOs, environmental litigation, and NGO-led public monitoring of pollution (Xu and Byrne, 2021). Since the new Environmental Protection Law grants NGOs standing as public representatives to file environmental public interest litigation (EPIL), organizations like Friends of Nature have initiated

approximately 60 EPIL cases annually. By 2019, Chinese courts had accepted 298 such cases filed by NGOs, with 119 reaching resolution (Wang and Lo, 2022). Some non-profit organizations have also played a role in bolstering environmental efforts. For instance, in 2013, the Institute of Public and Environmental Affairs (IPE), in collaboration with 25 other ENGOs, launched a total transparency initiative to advocate for full disclosure of PM2.5 sources. Building on this initiative, the IPE introduced the Blue Map App, which has attracted over 3.8 million users who disclose pollution incidents, with an average of 20,000 active users per day (Tilt, 2019). This development highlights a strengthened capacity for collecting and analyzing environmental big data, indicating a socio-technical transition in the environmental realm with a higher degree of non-state actor involvement. As Ma Jun, founder of the Blue Map, noted, ‘to our surprise... the MEE [recognized our efforts and] made a bylaw to require major emitters to report every hour to the public’ (Landreth, 2023). The adoption of such mass participatory initiatives raises questions about the extent to which China’s environmental governance can be understood as authoritarian (Kostka and Zhang, 2018).

The recent developments in China’s environmental governance warrant a modified framing. We adopt a conservative approach of conceptualization by calling our framework as AE 2.0, instead of proposing a completely different one. AE 2.0 describes a different phase of authoritarian environmentalism, growing upon the existing regime and not constituting a dichotomy against AE 1.0. Nonetheless, AE 2.0 captures three tendencies in China’s environmental governance over the past decade. As shown in Table 1, AE 2.0 is similar to its predecessor AE 1.0 in the sense that it remains state-centric and shows limited institutional accountability. It is characterized by a heightened level of policy-making centralization. The Chinese central government has reinforced its authority over local authorities through institutional reforms and the integration of Party discipline into environmental decision-making. These developments occur within a deep-seated hierarchical structure and do not constitute a fundamental shift in paradigm towards democratic environmentalism. Thus, the governance transition underlying this framework is incremental and instrumental.

Compared with AE 1.0, AE 2.0 recognizes the co-existence and co-evolution of authoritarian and democratic elements of governance, and their hierarchical but mutually reinforcing relationship. The government under AE 2.0 strategically employs both top-down and market-based tools for environmental projects. Furthermore, mass participatory initiatives have been adopted with a higher degree of non-state actor involvement. However, the use of bottom-up initiatives and decentralized mechanisms is still instrumental. They are used to achieve the state’s centrally defined environmental goals and targets, rather than promoting governance modernization and fulfilling universal values. The power between state and non-state actors remains imbalanced, but their

Table 1. Two Paradigms of AE in China.

	Authoritarian Environmentalism 1.0	Authoritarian Environmentalism 2.0
Institutional accountability	Limited	Limited
Legitimacy	Economic growth	Economic growth and environmental sustainability
Institutional structure	Hierarchical but fragmented	More centralized and tightly integrated into Party discipline
Policy approach	Top-down as a tradition	Strategic use of both top-down and market-based tools
Public participation	Limited and non-institutionalized	Mass mobilization and political absorption of non-state actors

relationship and role in environmental governance are becoming more dynamic, reflecting a process of political absorption of non-state actors and decentralized mechanisms into the state apparatus.

Within these evolving dynamics, the pursuit of performance legitimacy has emerged as a primary driving force. For decades, the Chinese Communist Party (CCP) derived its legitimacy mainly from rapid economic growth. Environmental protection is given a lower priority than industrial production and political control (Yeh, 2009). However, with economic growth slowing down and environmental degradation becoming evident, the CCP can no longer rely solely on economic growth to maintain its legitimacy. In its quest for stability, the CCP has shifted its focus from the previous ‘development-first’ paradigm to a new ‘green development model’ that prioritizes environmental sustainability. As argued by Zinda (2023: 201), ‘environmental values gain priority for their own sake.’ Climate change and a healthier natural environment have now become significant sources of performance legitimacy for the regime, compensating for the legitimacy crisis stemming from the sluggish economy (Teng and Wang, 2021).

In the following sections, we use two case studies to illustrate the AE 2.0 framework. The first case examines the routinized deployment of the CEITs. As one of the most salient top-down tools, CEITs enable the central government to reinforce its control over local officials and directly impose vertical control over horizontal interactions among local authorities. The second case focuses on the ETS, which exemplifies market-based mechanisms involving market actors and a blend of bottom-up and top-down policy instruments. We selected these cases as the focus of our analysis for three reasons. Firstly, they represent recent and innovative policy practices that shed light on the evolving dynamics between the state and other actors. Secondly, they exemplify three key tendencies under the AE 2.0 framework: centralization, a mix of top-down and bottom-up approaches, and the political absorption of non-state actors. Thirdly, both cases have been implemented for about eight to 10 years, providing a robust dataset for a comprehensive review of policy effectiveness and implementation. In both case studies, we examine how the state strengthens the disciplining of local government officials and incorporates public inputs through emerging technologies and big data analytics (Kostka et al., 2020). We also show how environmental policies are instrumentalized to serve non-environmental ends, thus becoming a ‘vehicle for the consolidation and centralization of state power’ (Li and Shapiro, 2020: 21).

Central Environmental Inspection Teams (CEITs)

The establishment of the CEITs demonstrates the central government’s attempt to re-centralize environmental institutions. As argued by Lo (2020), CEITs serve to reinforce and refurbish top-down management tools alongside ever-tightening controls on local authorities. The CEITs are a small ad hoc group, consisting of about thirty high-level officials and led by a high-ranking official at the deputy-ministerial level. The CEITs represent a form of campaign-style enforcement and lie outside the formal organizational structure of the government. The original CEITs were initially deployed for 1 month and subsequently recalled. They were first deployed to Hebei province in 2016 and then over all provinces for at least two rounds. These teams are tasked with investigating both previously identified environmental violations and new cases of non-compliance with environmental regulations (Jia and Chen, 2019). The central government hailed the 8 years of CEITs’ service as a “great success” (Xiang and Van Gevelt, 2020: 437). According to the MEE (2023), over 42,000 companies were fined a total of RMB 3 billion (US\$420 million), and disciplinary action was taken against more than 21,800 local government officials for violating environmental regulations.

The effectiveness of CEITs is arguably attributed to the political mandate provided by the central government in an attempt to pursue centralization and reduce fragmentation. Informally called ‘imperial envoys,’ the CEITs report directly to the central committee of the central government and

are sent to carry out random spot checks in locations where there are suspected cases of environmental violations or poor enforcement of government regulations (Perry, 2019). Unlike the previous cohorts of central inspectors who targeted companies or entrepreneurs, the CEITs focus on government officials. As described by a local official, ‘...we [local officials] lived and ate in our offices [during the CEIT’s stay]. Once anything happened, we all rushed to the scene to deal with it immediately and solved the problem ourselves. We were the targets of the CEIT. What the companies do is secondary’ (Xiang and Van Gevelt, 2020: 434). Indeed, any official found by the CEITs to be in violation of environmental regulations would face severe career repercussions (Wang, 2021). The CEITs are empowered to publicly criticize senior local officials for failing to address severe pollution issues. This demonstrates Beijing’s attempt to name and shame local governments for the persistence of environmental violations in their jurisdictions. They can also wield authority over local personnel appointments, promotions, and demotions by invoking Party rules and disciplines. Shen and Jiang (2021) therefore view the CEITs as an instrument employed by the CCP to reinforce control over local officials and strengthen vertical command chains, as a way to overcoming governance fragmentation.

Despite gaining political legitimacy from the top leadership, the operation of CEITs involves a strategic use of bottom-up forces and mass mobilization. Local residents are enlisted and mobilized to identify incidents of environmental violations. Before the establishment of CEITs, specific telephone hotlines and PO box addresses were set up to facilitate direct communication between local residents and central inspectors. Massive efforts were made to promote public awareness through information briefings on local TV channels, newspapers, and social media platforms. These initiatives actively encouraged local residents to identify and report suspected cases, and brought them closer to the official representatives of the central government. Xiang and van Gevelt (2020: 435) found that local residents were very keen to engage with the CEITs: ‘they would tell the inspection team all the problems around them, no matter how trivial the problems were.’ This is corroborated by official reports of the MEE, which indicate that during the initial phase of CEIT deployment, these central inspectors regularly received over 100 daily tip-offs from local residents. Over the two rounds of inspections, the CEITs have received over 228,000 tip-offs, leading to the investigation of more than 200,000 companies allegedly failing to comply with environmental regulations (MEE, 2023).

This bottom-up mass reporting mechanism proves to be an effective way to expose the failures of local governments that would otherwise remain undetected under a monolithic top-down approach (Zeng, 2020). More importantly, this mechanism demonstrates the popular support for the strengthening of the central government’s control and the legitimization of such a centralizing attempt. Described as a ‘total grassroots approach’ and ‘populist approach,’ the mass reporting system plays a role in bridging the information gap between local and central governments and creates a space for the liberal elements of environmental governance (Marquis and Bird, 2018; Shen and Jiang, 2021). From the perspective of Chinese citizens, the CEITs have created a rare opportunity for public participation and for making environmental management more inclusive. Despite being a constrained form of public involvement, it has reinforced the sense of ownership and collective responsibility in tackling environmental issues.

However, this centralizing policy has drawbacks. There are concerns about potential pushback from local officials and unintended governance outcomes in the medium-to-longer run (Jia and Chen, 2019; Kostka and Zhang, 2018; Wei and Kang, 2023). One key issue is the highly politicized nature of the CEITs, which are empowered by Party discipline. The political power of the CEITs created enormous pressure on local environmental officials. According to Shen and Jiang (2021: 61), local officials have to leave everything behind and prioritize the tip-offs transferred from the CEIT: ‘no matter how hard you [local officials] try, no matter what you have achieved, one mistake, one tip-off, or one sudden environmental incident can ruin all your previous work.’ Consequently,

local officials may directly or indirectly shy away from engaging with environmental regulation, resulting in a perverse outcome (Van der Kamp, 2017; Xiang and Van Gevelt, 2020).

The long-term sustainability and lasting effects of the CEITs are also questionable, because they are set up as ad hoc teams. The current institutional reforms are driven by the determination of top leaders to address the environmental crisis (Lo, 2020), but the continuity of political commitment remains an unknown. There are currently significant uncertainties in China's economy. A deteriorating economic environment may lead to a revocation of some distortionary environmental policies, such as the CEITs, in ways that are similar to those prompted by the COVID-19 pandemic (Shen and Jiang, 2021). In fact, a comparison of two rounds of CEIT deployments reveals a 60% reduction in tip-offs and a nearly 70% decrease in companies being penalized and local officials being held accountable (MEE, 2023). The prospects for the CEITs to expand and become a permanent institutional arrangement remain unclear (Ahlers and Shen, 2018; Li and Shapiro, 2020; Wang et al., 2018).

Emissions trading schemes (ETSs)

China's pilot ETSs are an example of a decentralized and market-based policy initiative orchestrated by the state. Under an ETS, companies are required to surrender a unit of emission allowance for every unit of emissions they generate. These schemes create carbon markets in which emission allowances are traded. The opportunity for trading can help reduce the aggregate costs of emission reduction.

In Europe and North America, the development of carbon markets has benefited from a neo-liberal political-economic context, which provides an enabling condition for the privatization, commodification, and marketization of environmental goods and services (Meckling, 2011; Newell and Paterson, 2010). These carbon markets present opportunities not only for reducing carbon emissions, but also for capital accumulation through profits derived from the production, trading, and financing of carbon permits (Bumpus and Liverman, 2008). Private sector actors play an important role in this process, including compliance enterprises, commercial banks, speculative investors, carbon funds, private consultants, brokers, insurers, rating agencies, and exchanges.

Until recently, such market mechanisms did not play a key role in China. Despite its active participation in the international carbon market since 2005, the central government was cautious about establishing a domestic carbon market, and the development within the country was fragmented (Huang, 2013; Lo and Howes, 2013). The reduction of carbon emissions was treated by state elites as a technical issue, and was primarily addressed through energy-saving measures introduced in a top-down fashion (Lo, 2010; Tsang and Kolk, 2010). After years of international market engagement and internal political deliberation, the NDRC finally approved seven pilot ETSs in two provinces and five major cities. The plan was to launch a national ETS based on the local experience (Lo et al., 2020; Zhang, 2015).

These ETSs operate as policy experiments at the local level. The central government supports the selected local governments to design their own ETSs, leading to varying features in terms of cap-setting, emissions thresholds, industry coverage, allowance allocation methods, and carbon offset arrangements (Feng et al., 2018; Zhang, 2015). The initial outcomes of these pilot ETSs seem encouraging. Cui et al. (2021) measured the impact of these ETSs and found that they reduced total emissions by 16.7% and emission intensity by 9.7% during the first 3 years of operation. Xiang and Van Gevelt (2022) constructed a synthetic control for Guangdong Province, demonstrating that the provincial ETS reduced approximately 338.9 MtCO₂ annually in 2013-2017 in Guangdong, demonstrating the effectiveness of this pilot scheme. Building on the initial progress, the central government launched its national ETS in July 2021 (Nogrady, 2021). The amount of carbon emissions covered is estimated to exceed four billion tons per year, accounting for over 40% of

carbon emissions nationwide. The national ETS has surpassed the EU ETS to become the biggest carbon market in the world (Liao and Yao, 2022).

The pilot ETSs have enabled governance decentralization, cross-sector collaboration, and business engagement (Chen and Lo, 2021; Lo and Chen, 2020). However, these opportunities do not emerge from the bottom up, but from the top down through state-affiliated actors and organizations. The governance network, for example, is led and coordinated by ‘independent’ experts who have intimate professional and organizational ties with state agencies, whereas truly independent consultants and private enterprises are marginalized (Lo and Chen, 2019). Moreover, the trading of emission allowances is found to be administratively driven, rather than market-driven. The state can ‘prompt companies to engage in “trading” with each other’ (Cong and Lo, 2017: 423). Liu et al. (2019) have also argued that carbon emission trading in China is primarily driven by the administrative commands from the government. An analysis of 51,076 Party-led newspaper reports shows that emission reductions under the Guangdong ETS were systematically associated with political signals, indicating that the market transactions were strongly influenced by the Party Secretary’s political objectives and interventions (Xiang and Van Gevelt, 2022). Similarly, Cao et al. (2021) found that while there is a significant reduction in coal consumption associated with ETS participation, but this reduction was achieved by reducing electricity production driven by government decisions, rather than the optimizing behavior of companies. This is echoed by Goron and Cassisa (2017), whose interviewee described the Chinese carbon market as a ‘command economy style’ market that is driven by rigid policy targets.

The use of this market mechanism in China is aligned with the centralizing tendency. Similar to CEITs, these ETSs were introduced as policy experiments before relevant laws were officially established. Without a formal legislative basis, the initial legitimacy of Chinese policy experiments stems from the explicit discursive and material support from high-level state leadership (Heilmann, 2008; Lo et al., 2020). Although local cadres play a crucial role in initiating, operating, and adapting central commands, the political legitimacy of their action and the potential for putting their policy experiments into a statewide practice rest upon the central authorities (Zhang and Andrews-Speed, 2020). Empirical research has shown that local governments face numerous technical and institutional challenges during the implementation of these policy experiments, making them rely more on guidance from the central government. For instance, in the absence of common monitoring, reporting, and verification (MRV) standards, instead of finding solutions by themselves, local governments often turn to the central authorities for solutions. As articulated by a local cadre, ‘what can we do if there are no common standards [for MRV]? The central government is dealing with this’ (Lo et al., 2020: 166). Likewise, Miao and Li (2017) show that lower-level governments adopted a passive role, waiting for and depending on receptive political and policy signals emanating from the central authorities. They conclude that ‘the involvements of market-based arrangements have only appeared to strengthen the climate governance of the central authorities’ (Miao and Li, 2017: 9).

Therefore, this market-based mechanism is used in a top-down fashion. Operating as policy experiments under the central government’s political guidance and mandate, these ETSs have reinforced the power of state actors and strengthened the state’s hierarchical control over local cadres (Goron and Cassisa, 2017; Lo et al., 2020; Xiang and Van Gevelt, 2022). The influence and involvement of non-state actors are tightly constrained by the state’s control and used to legitimize and support the use of a market mechanism under an authoritarian system (Chen and Lees, 2016; Lo and Chen, 2019). These schemes are an arguably effective attempt to actively engage businesses and other non-state actors and enable local governments to trial and design a fundamentally different policy instrument. Although this policy initiative does not represent a transformative change in governance, it demonstrates the instrumental use of an alternative environmental management approach that is more flexible, collaborative, responsive, and less coercive than its predecessors.

Discussion

This review article examines how authoritarian the environmental governance of China has been in the past decade. Evidence shows a centralization of environmental governance institutions and the persistence of managerial approaches, but it occurs alongside slower, incremental processes of decentralization, participation, and fragmentation at the local level. There are increasing opportunities for engagement with, and empowerment of, citizens, businesses and industries, and local governments. Paradoxically, these opportunities often end up strengthening, rather than weakening, the central government's control over environmental regimes. The co-evolving tendencies fall within the scope of AE, but the current scholarly discourse needs a refreshing towards what we call AE 2.0.

The current scholarly discourse puts emphasis on the 'tendency toward a centralization characterized by the reinforcement and refurbishment of top-down management tools' (Kostka and Zhang, 2018: 778). Since 2012, the tendency for (re-)centralization has accelerated through the adoption of more centralized institutional arrangements, which demonstrate the core features of authoritarian environmentalism that have been widely used to describe China's environmental governance (Lo, 2021). The state can override the conflicts of interest that often impede democratic governments and take resolute actions to combat environmental issues (Li and Zinda, 2023). It enjoys the sole power to 'monopolize the production of environmental knowledge and policies,' creating significant political and discursive power across society under the centrality of the CCP leadership (Li and Shapiro, 2020: 15; Qiaoan and Teets, 2020).

Our review draws attention to some of the new developments that present nuanced differences from perfect authoritarianism. The state continues to dominate environmental governance, but this has met with fragmentation (Lo, 2024; Xiang and Van Gevelt, 2020; Zinda, 2023). Party disciplines are invoked more often to hold protectionist local government leaders accountable. This closer linkage between the Party and local administration is used to address institutional fragmentation by strengthening control over local governments and energy-intensive enterprises. However, such a highly politicized approach relying on Party disciplines runs a risk of downplaying the rule of law. Rigid management tools, such as quantitative performance targets and career consequences, may result in a sense of withdrawal and helplessness among local cadres, and consequently symbolic engagement with environmental regulation. In a worse scenario, the overuse of 'sticks' instead of 'carrots' may create negative incentives among local officials, potentially causing them to withdraw from active engagement with environmental regulation (Shen and Jiang, 2021). Stronger vertical management has shown its limits.

The vertical management is supported by horizontal management, which enlists non-state actors and involves civil society and the market. Nonetheless, the changes are incremental. The new measures do not substitute but gain legitimacy from the state and its vertical control. The CEITs, for example, only allow local residents to engage through officially recognized public participation channels for policy implementation purposes. Popular engagement and representation in upstream and mid-stream policy-making processes remain limited. The state has shifted its approach from solely relying on direct coercion to cultivating compliant subjects and managing public concerns directly. The carbon market in China is expected to create incentives for pollution control, but it operates under the shadow of the state and is primarily driven by political signals, rather than market signals. This stands at odds with the governance of the international carbon market under the Paris Agreement, which has become more decentralized than its predecessor (i.e. the Kyoto Protocol).

AE 2.0 describes a modest departure from both perfect and fragmented models of authoritarianism. The current governance regime at the national level does not only pursue centralization and reduce fragmentation, but is attuned to the instrumental use of bottom-up, decentralized initiatives and the deployment of non-state actors to legitimize and support its management of the otherwise

loose governance systems at the local level. Mass mobilization and market mechanisms are often described as features of liberal-democratic models of environmentalism (Bernstein, 2002), which are understood as an alternative to authoritarian environmentalism. AE 2.0 is situated within the scope of authoritarianism, but has a modest dose of these liberal-democratic elements. Schröder (2011) has found that hybrid (public-private) organizations played a similar role in decentralization under a market mechanism operated by the central government. Shahar (2015) has also suggested that a mix of authoritarian and liberal veils have covered the policies leading to the establishment of the national carbon market and the rapid development of green finance. The governance approach adopted is not dichotomous. Strictly top-down controls are not the only tool being used to address environmental issues, even during the past decade of political (re-)centralization.

AE 2.0 also indicates a form of governance incrementalism. The incremental change is characterized by the political absorption of non-state actors and the political integrity of the vertical management system. Bottom-up and decentralizing forces are selected, managed, and legitimized by the state. Their power and influences reinforce those of the central authorities that enable and empower them. Non-state actors are involved and co-opted, but lack agency and independent influences. They fail to challenge the rolling back of some governmental environmental policies, such as the 'Green for Grain' program, suggesting that their power and influences are issue-specific and bound. As Goron and Bolsover (2020) have suggested, environmental practices in China have strengthened the power of the central government more than that of the civil society, tipping the power balance away from – not closer to – the latter. The governance regime, therefore, is developmental in the sense that a strong and powerful state bureaucracy is primarily responsible for modernizing environmental governance systems and introducing a limited range of liberal elements from the top down.

Two issues about AE 2.0 warrant further investigation. Firstly, the political sustainability of the liberal-democratic elements of governance is uncertain under the current economic situation. While Chinese state media and officials have stressed that stringent environmental policies will endure, these policies could be vulnerable to weak enforcement or even abandonment should the Chinese economy deteriorate further. The post-pandemic recovery and the subsequent economic slowdown may discourage local officials from prioritizing environmental issues, as they are 'at the forefront of the conflict between economic development and environmental conservation' (Lo, 2024: 6). This potentially undermines the central goal of this new approach: to establish a coordinated central-local coalition for environmental governance. In fact, China has turned a green light to building more coal-fired power plants in 2022 than at any time in the last 7 years (Simon, 2023). The ongoing environmental reform is anchored upon the goodwill and power of the state leaders at the very top level, which may decline as economic conditions worsen or other bigger issues arise to challenge their rule.

The second issue concerns the increasing comparability of China's authoritarian environmentalism with its regional variants. There are different AE models in East Asia, including some of the mature democracies in the region, such as South Korea and Singapore (Bruun, 2020; Gverdtseteli, 2023; Li and Zinda, 2023). In South Korea, for instance, the central government partially incorporated the voices of non-state actors, but bypassed existing legal and institutional procedures in order to expedite a river restoration project (Han, 2015). The politics of AE in China is influenced by its unique socialist legacies, but the recent developments have moved it closer to its regional counterparts that do not have such a political tradition. We suggest that the instrumentalism and incrementalism of China's AE 2.0 are early indications of a transition process. These small changes provide an avenue for understanding the longer-term transition of China's environmental governance and comparing it with those AE models that operate within liberal-democratic systems. We therefore call for comparative studies focusing on the potential alignments and discrepancies in governance approach in countries practicing AE.

Conclusion and policy implications

This paper highlights the dual tendencies in China's AE. Recent developments are marked by a (re-)centralization of environmental governance and, simultaneously, a strategic use of mass mobilization and market mechanisms. Despite the diversification of policy tools being used for meeting environmental goals, the 'shadow of the state' continues to shape and define the conditions for bottom-up initiatives and decentralized systems to function. Non-state actors are absorbed into the politics of (re-)centralization. A greater variety of horizontal management tools is used to maintain the political integrity of vertical management. These changes are incremental and reinforce the dominance of the state in environmental governance.

These findings offer insights into the prospects for democratizing environmental governance in China. Apart from China, AE is also practiced by other East Asian democracies, suggesting that authoritarian and democratic elements of governance can co-exist. Certainly, authoritarian regimes are not rigid in their governance practice. They often show variations in the form of authoritarian governance adopted, depending on historical and contemporary factors that operate at different levels of analysis. There are early indications that China is moving into this direction by creating a governance regime that remains dominated by the central authorities, but accommodates a limited range of participatory and decentralizing elements. We argue that, however, this is a staged transition process and currently has not moved beyond the scope of AE. Our framing puts emphasis on the developmental characteristics of AE in China. This developmental approach recognizes the state's leading role in modernizing environmental governance systems, especially in the early stages of transition. Further analysis of this transition process and its impacts is needed to understand how China's environmental governance navigates the persisting top-down controls legitimized by Party rules.

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ORCID iD

Alex Y Lo  <https://orcid.org/0000-0002-5953-4176>

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Chen Xiang is an Assistant Professor in the School of International and Public Affairs at Shanghai Jiao Tong University, and she is also a Research Fellow at the Harvard-China Project on Energy, Economy and Environment at Harvard University. Her research explores the antinomies that emerge through economic and political modernization, such as development and environmentalism, nationalism and populism, and China's foreign policies.

Alex Lo is a human geographer specializing in climate change adaptation, governance, and policy. He received his PhD in Environmental Studies from the Australian National University, and is a recipient of the World Social Science Fellowship, Endeavour Research Fellowship, Universitas 21 Fellowship, Pete Hay Prize, Li Ka Shing Prize, Dr. Stephen S.F. Hui Prizes, and Ada and Arthur Hill Prize.