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Ecological civilization, authoritarian environmentalism, and the eco-politics of extractive governance in China

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ABSTRACT

With the national push for an ecological civilization under way, Chinese environmental governance is becoming more authoritarian as the central government exerts a stronger control over the enforcement of environmental policies. In this paper, I examine how the ecological civilization project has become a key driver of change in extractive regions, constituting new eco-politics of extractive governance that can be characterized by heightened authoritarian environmentalism, with the Central Environmental Inspection Team as a particularly important mechanism through which the centralization of environmental governance is achieved. I argue that the ambitious environmental goals of an ecological civilization are achieved by sacrificing the interests of extractive communities. As these vulnerable communities are highly dependent on their extractive industries and often face significant diversification difficulties, the eco-civilization project has devastating local socioeconomic impacts and are likely to accelerate structural decline and population shrinkage if not promptly addressed through external support. I argue that this constitutes a form of environmental injustice, where environmental policies impose unfair burdens on disadvantaged individuals and communities. In particular, extractive communities bear the greatest burden of both environmental exploitation and environmental protection. Achieving socially just environmental sustainability should be an important aspect of ecological civilization.

1. Introduction

Extractive regions are vulnerable settlements that are excessively dependent on the exploitation of natural resources. The fate of these regions is closely associated with that of the leading extractive industries because of narrow economic foundations, geographic isolation, and the absence of realistic alternatives for diversified development (Freudenburg, 1992; Lockie et al., 2009). Extractive regions that do not promptly transform their economies often suffer from decline and population loss when the resources they rely on are exhausted or exploitation is no longer considered economical (Constantinescu, 2012; Le Billon and Good, 2016; Martinez-Fernandez et al., 2012; Ross, 2019). Consequently, the transformation towards a more diversified and sustainable economy has been a central theme in extractive governance worldwide (Li et al., 2015).

The study of the environmental politics and justice of extractive regions is informed by unequal ecological exchange theorists, who have long argued that the material consumption of the developed regions is founded on the unequal appropriation of natural resources from extractive regions (Foster and Holleman, 2014; Hornborg and Martinez-Alier, 2016). In such uneven development, less powerful economically and politically extractive regions suffer from systematic undervaluation

of their natural resource assets—a valuation that does not sufficiently internalize ecological and social costs of resource exploitation. Consequently, the eco-politics of extractive governance are defined by the unsustainable utilization of natural resources and environmental degradation, which often become sources of conflict, pitting local communities against the government and corporations (Arsel et al., 2016; Bisht and Gerber, 2017; Bond and Kirsch, 2015; Faruque, 2018). Therefore, the contentious eco-politics of extractive governance can be characterized by a struggle between the need to reduce vulnerability through sustainable transition and the logic of global capital accumulation that ruthlessly intensifies resource dependency and vulnerability.

China has many extractive regions, most of which are economically marginalized and located in peripheral inland regions (Tan et al., 2020). Officially, China has 262 “resource-dependent cities”, including 126 prefecture-level units and 136 county-level units (Li et al., 2020). Environmental deterioration and resource depletion, common challenges in these regions, are consistent with the ecological unequal exchange theory (Guo et al., 2016; Yu et al., 2014). Yet, the rise of an ecological civilization as a key political ideology under the administration of Xi Jinping provides grounds for optimism that sustainable transition may be achieved in the extractive regions (Gare, 2012; Hansen et al., 2018). The ecological civilization concept (*shengtai*

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wenming, also known as eco-civilization) originated in the Soviet Union but has been embraced by the Chinese government since the 17th National Congress of the Chinese Communist Party in 2007 (Heurtebise, 2017). In 2018, the ecological civilization was incorporated into the constitution, which further strengthened the authoritative position of the concept in environmental governance. Although the exact meaning of the concept is elusive, environmental protection and sustainability have certainly become more important under the “new normal” (Kostka and Zhang, 2018). Therefore, examining how the Chinese government intends to apply the concept of ecological civilization in the context of extractive regions is crucial.

In this paper, I argue that, driven by the national push for an ecological civilization, authoritarian environmentalism has become a key driver of change in extractive governance. Authoritarian environmentalism as a governance concept typically refers to a centralized approach to environmental policymaking and implementation where governing power is concentrated in the hands of autonomous and technocratic “eco-elites” (Gilley, 2012). Authoritarian environmentalism may also refer to the use of stringent and potentially unpopular policy solutions to prevent individuals or businesses from engaging in unsustainable behaviors (Lo, 2015). The full argument is presented in three parts.

First, based on a temporal analysis, I establish the heightening of authoritarian environmentalism as a key component of the ecological civilization project. Past studies have revealed that Chinese environmental governance was highly decentralized and largely symbolic. The central government introduced increasingly strict environmental targets, but did not exercise strong control over their implementation, and delegated responsibility to local governments (Eaton and Kostka, 2014). Consequently, local governments often adopted lax enforcement to protect local interests, thereby alleviating the impact of top-down environmental policies (Ahlers and Shen, 2017; Kostka and Hobbs, 2012; Lo, 2014a). However, several commentators have noted that a critical aspect of the governance approach of Xi Jinping is the centralization of power (Naughton, 2017; Wang, 2017; Wang and Zeng, 2016), with the concomitant implication that the central government has gained more control over the conduct of local governments. I highlight the Central Environmental Inspection Team (CEIT) as an important mechanism for achieving the centralization of environmental governance and argue that the CEIT not just follows but significantly improves campaign-style enforcement.

Second, I use an empirical case study to illustrate that CEIT-driven authoritarian environmentalism has significantly changed the eco-politics of extractive governance. CEIT enforcement takes drastic and “one-size-fits-all” action against extractive industries, without due consideration of local circumstances. Central environmental polices trump local protectionist instinct. Hence, environmental objectives are achieved at a high socioeconomic cost, as the vulnerable extractive economy collapses, firms close, and thousands of jobs are lost. Therefore, rather than benefiting extractive communities, the blunt and drastic nature of top-down eco-civilization politics have severe local impacts.

Third, I consider the future of the extractive regions under the newly normalized ecological civilization and heightened environmental authoritarianism. I argue that extractive regions face immense difficulties in transforming their economies on their own. However, the central government has failed to provide sufficient support to assist the transformation. In a country where resources and authorities are concentrated at the central level, long-term decline and population loss may be inevitable if the central government remains under-involved in the transition.

The methodology of this research relies on an in-depth case study through documentary and in-depth interviews. Rose City (a pseudonym used to protect the identities of informants) was chosen for a detailed analysis of extractive regions in peripheral China. First-hand data were collected in extensive fieldwork from 2018 to 2019. To obtain a

complete picture of extractive governance, I interviewed not only environmental officials, but also those responsible for economic planning, human resources, and industrial development. In total, 25 semi-structured interviews with government officials from three levels of government (provincial, municipal, and county) were conducted. In addition, 12 interviews were conducted with businesses affected by environmental enforcement. To ensure the diversity of the information, I interviewed businesses in different sectors (logging, mining, manufacturing, etc.) and ownership types (state and privately owned).

2. The evolution of Chinese authoritarian environmentalism

2.1. Past

China is an authoritarian and unitary state and its central government has played a dominant role in policymaking (Li and Wang, 2012; Lo, 2014b; Price et al., 2011). However, in the post-1978 reform era, the central government took significant steps towards administrative decentralization (Ahlers et al., 2016; Heilmann, 2008; Landry, 2008). Decentralization did not simply focus on the formal devolution of decisional authority but it also related to ending rigid ideological controls that have deterred local noncompliance (Chung, 2000). A renewed emphasis on pragmatism frees local officials to become stronger representatives of local interests (Lo, 2015). These officials are empowered—to various extents and depending on the policy area—to (re) make important policy decisions and adapt the central directives to local contexts.

In the environmental context, although the central government has established performance evaluation known as the target responsibility system (TRS) to incentivize the proper implementation of top-down policies, such control is ineffective and symbolic (Lo, 2020). The TRS is an annual performance evaluation exercise of local leadership, and failure to achieve certain performance targets results in financial penalties and the potential stalling of career development (Kostka, 2016). However, several problems undermine the effectiveness of these systems. First, reliance on self-reporting statistics to evaluate local environmental performance is problematic, because local statistical bureaus are under the control of local governments, thus allowing local leaders to fabricate environmental statistics (Lo, 2014a; Ma and Zheng, 2016). Second, environmental targets often contradict socioeconomic objectives with the former being widely perceived as less important than the latter (Jiang et al., 2020; Ran, 2013). Third, some environmental targets have been criticized as being too easy to achieve while the punishments for failure are inconsequential (Lo, 2014a). Therefore, the central government does not offer a clear incentive for local officials to commit to proper implementation through the TRS.

The decentralization of administrative responsibilities, coupled with a lack of clear external, top-down incentives to implement environmental policies, manifest themselves in lax local enforcement in extractive regions. For example, Eaton and Kostka (2014) researched Shanxi (known for its coal production) and found that local officials acting like “roving bandits” that only focus on short-term economic goals at the expense of long-term climate objectives. Wu et al. (2017) found that coal cities such as Lanzhou in Gansu and Hohhot in Inner Mongolia have poor energy conservation performance and have adopted coping mechanisms to downplay failures, exaggerate achievements, and magnify single measures. While researching industrial energy conservation policy in Changchun, a northeastern city known as the “the rust belt of China”, Lo (2015) found that the municipal government failed to allocate funding support to enterprises engaging in energy efficiency improvement and refused to punish companies that failed to meet energy targets.

Ran (2013) points out that the nature of decentralized environmental governance is a political consensus between central and local governments and that environmental protection is secondary to the primary goal of economic development.

Table 1
Local officials held accountable during the first wave of inspection.

Province	Inspection start date	Inspection end date	Provincial level	Prefecture level	County level	Township level or below	Total
Hebei	31/12/2015	4/2/2016	N/A	N/A	N/A	N/A	614
Henan	16/7/2016	16/8/2016	0	10	83	134	227
Hubei	26/11/2016	26/12/2016	0	26	113	82	221
Gansu	30/11/2016	30/12/2016	3	33	104	78	218
Guangdong	28/11/2016	28/12/2016	0	21	83	103	207
Jilin	30/8/2017	30/9/2017	0	53	93	31	177
Heilongjiang	19/7/2016	19/8/2016	0	23	93	54	170
Hunan	24/4/2017	24/5/2017	0	28	94	45	167
Shandong	10/8/2017	10/9/2017	0	29	104	30	163
Sichuan	7/8/2017	7/9/2017	0	29	95	36	160
Shaanxi	28/11/2016	28/12/2016	0	26	74	54	154
Anhui	27/4/2017	27/5/2017	0	25	82	44	151
Guangxi	27/4/2017	27/5/2017	0	25	82	44	151
Liaoning	25/4/2017	25/5/2017	0	41	63	39	143
Jiangsu	15/7/2016	15/8/2016	0	18	39	80	137
Fujian	24/4/2017	24/5/2017	0	14	81	41	136
Hainan	10/8/2017	10/9/2017	0	30	56	49	135
Ningxia	12/7/2016	12/8/2016	0	12	78	35	125
Inner Mongolia	14/7/2016	14/8/2016	0	27	65	32	124
Guizhou	26/4/2017	26/5/2017	0	21	51	48	120
Shanxi	28/4/2017	28/5/2017	0	22	61	34	117
Xinjiang	11/8/2017	11/9/2017	0	25	62	25	112
Jiangxi	1/6/2018	1/7/2018	0	8	46	57	111
Yunnan	15/7/2016	15/8/2016	0	25	50	35	110
Zhejiang	11/8/2017	11/9/2017	0	19	61	29	109
Beijing	29/11/2016	29/12/2016	0	17	47	34	98
Tianjin	28/4/2017	28/5/2017	0	22	52	9	83
Tibet	15/8/2017	15/9/2017	0	14	39	30	83
Qinghai	8/8/2017	8/9/2017	0	16	32	14	62
Chongqing	24/11/2016	24/12/2016	0	28	19	32	79
Shanghai	28/11/2016	28/12/2016	0	8	24	39	71

Note: Compiled by the author from various sources.

There is no essential conflict of interest between the central and local governments in the area of environmental policy. Both want GDP growth more than anything else because it benefits them directly and because, they believe, it leads to social stability. Local government officials are hypnotized by economic growth to such a degree that they turn a blind eye to pollution, a situation that is mostly due to the current perverse incentive structure set by the central government. This structure makes them believe that the central and local governments are in cognitive agreement, and that environmental problems are not a priority in the policy agenda when compared with GDP growth and maintaining social stability. (Ran, 2013)

This implicit but highly consequential consensus means that despite ostensibly state-driven top-down control, environmental politics in China have been authoritarian on paper only, tending to serve “symbolic legitimacy” rather than achieving actual policy results (Wang, 2018). However, recent studies have shown that this symbolic authoritarian environmentalism may end, as the central government has begun to regain control over environmental governance to achieve better policy results.

2.2. Present

The concept of ecological civilization outlines a vision of the future that is characterized by environmental sustainability, and strengthening environmental governance has been identified as key to achieving this goal. In a paper titled “Tightening the grip: environmental governance under Xi Jinping,” Kostka and Zhang (2018) noted that the central government has made aggressive efforts to improve the capacity of the state to enforce environmental policies, such as reorganizing the Ministry of Environmental Protection into the much larger and more powerful Ministry of Ecology and Environment, and centralizing

personnel control of local environmental officials, which reduces the ability of the local governments to interfere with their work. Furthermore, new hierarchical structures have been established to govern transboundary environmental problems such as river governance (Chien and Hong, 2018). The TRS has also been strengthened with a more rational target allocation process and stronger, less ambiguous targets (Lo, 2020; Zhao and Wu, 2016). Additionally, the central government has begun experimenting with the use of information technologies to circumvent information and enforcement barriers (Hsu et al., 2020; Lei et al., 2017). Heightened authoritarian environmentalism is coming.

One particularly important related initiative was the establishment of the CEIT in 2016. Led by senior government officials from Beijing and empowered by the highest authorities, the central inspection teams were sent to every province to inspect how well the local enterprises and authorities complied with environmental regulations (Jia and Chen, 2019). The CEIT is a form of campaign-style enforcement, a governance tool periodically used by the central government to counter enforcement failures at the local level (Liu et al., 2015). A well-known example is the anti-corruption campaign, which has resulted in the arrest of multiple local officials who committed high-profile corruption (Ben et al., 2020; Zhu et al., 2019).

The central government has a history of using enforcement campaigns to ensure better environmental outcomes. The similar creation of the CEIT strengthens past initiatives in three important ways. First, campaign-style enforcement involves an extraordinary mobilization of political resources and, therefore, is often limited to a short period of time. Consequently, enforcement campaigns may only generate temporary impacts (Van Rooij, 2006). To address this problem, the CEIT has been institutionalized by the central government to become more permanent. Unprecedentedly, the CEIT revisited 20 provinces in 2018—immediately after the first round of inspections—for follow-up inspections and conducted a third wave of inspections in 2019.

The second improvement area relates to access to information. Past environmental campaigns commonly lacked accurate and reliable information. The CEIT has used an independent channel of information by setting up a hotline to allow the public to contact them directly and report environmental issues. By raising public environmental awareness and increasing their engagement in environmental enforcement, the CEIT hopes to avoid local government interference.

The third and perhaps most drastic area of improvement is punishment. Whereas previous environmental inspection campaigns primarily focused on offending enterprises, the CEIT also pursues offending local officials, who are held responsible for lax enforcement. According to official reports, 4735 officials from various administrative levels have been held accountable in the first wave of inspection (Table 1). The majority of these officials were subjected to warning or disciplinary action, with some facing more serious consequences, such as being dismissed from government positions, expelled from party ranks, and criminally charged. This resulted in heightened pressure on local governments to enforce environmental policies. Driven by these reforms, several environmental data analyses, such as air quality data, have suggested that the creation of CEIT contributes to a significant shift in environmental enforcement and that the impact has been long-lasting (Jia and Chen, 2019; Wu and Hu, 2019).

3. The new eco-politics of extractive governance

Rose City is situated in a major mountain range in a remote part of inland China and, although officially called a city (*shi*), is spatially a vast area consisting of several dispersed urban settlements of various sizes and a total population of over 1 million. With over 80% of its land covered by forest, the economy of Rose City is not very developed and is highly dependent on extracting natural resources, with the three leading industries (logging, coal mining, and iron mining) accounting for approximately half of the GDP and jobs.

Because of dependency on the extraction of natural resources, Rose City has been severely affected by heightened authoritarian environmentalism. Two environmental policies have particularly affected the region's extractive industries. First, the Small Coal Mine Closure Program demands the permanent closure of coal mines with production capacities below certain thresholds (currently defined as coal mines with an annual production of less than 300,000 tons). Small coal mines are targeted because of their poor safety and environmental record (Shen and Gunson, 2006). Although the initiative was created in the late 1980s, enforcement has recently strengthened significantly (Andrews-Speed et al., 2005). Rose City has many small coal mines and has been greatly affected by this policy. Second, the logging sector is the target of control for the Natural Forest Conservation Program. The policy was first introduced in the 1990s to preserve the ecological values of natural forests, and was significantly strengthened in 2015 when Xi Jinping placed a sweeping ban on commercial logging in all natural forests in China (Hua et al., 2018). The policy is expected to increase forest cover, which has important implications for ecosystem services such as carbon sequestration. As a mountainous area with good forest coverage, commercial logging and wood processing have been a key economic activity in Rose City for over five decades; consequently, the region was highly affected by this policy.

Our ground research found that CEIT has been highly impactful on local extractive industries. Environmental enforcement under CEIT has the following characteristics: First, it is highly formalistic, characterized by taking a “one-size-fits-all” approach through adherence to rigid requirements. By removing the power of local implementation, top-down enforcement means that enforcement becomes highly uniform, without exception. For example, large state-owned enterprises (SOEs) with strong government ties have long served important social security functions in China. However, they do not receive preferential treatment. Second, enforcement involves taking drastic, sudden, irreversible, and coercive actions against offenders to achieve immediate

results. This is typical of campaign-style enforcement but handicaps the response of local actors and leads to wastefulness. For example, coal mine closure was enforced by permanently destroying the mines through blasting and collapsing rockshafts. The tight time limit of the closure did not permit the many coal mine owners to retrieve the equipment in the mines.

I understand the policy, but they should have given me more time to prepare because I had mining equipment in the mine that I could not salvage. There were over 100 million RMB worth of equipment in there. The mine still had approximately 2 million tons of coal capacity. It is permanently gone. (Owner of a small coal mine)

It would be difficult to understate the negative economic impact of top-down environmental enforcement, as Rose City is hit by an unprecedented wave of bankruptcy and closure. For example, a coal town in Rose City historically had a high number of small coal mines, with approximately 500 coal mine operators who employed around 100,000 workers. With this high concentration of small coal mines, the town was hit very hard by the coalmine closure policy. As of 2019, all but nine companies have been permanently closed, and the capacity has declined from over 6 million tons to less than 2 million tons annually. In another example, the largest and oldest coalmining SOE in Rose City was, in fact, an SOE established and owned by the provincial government. The company had four out of six coal mines closed by the government because their sizes were below the threshold. This left the SOE with significantly crippled production—a decline from 7 million tons to just over 1 million tons of coal per annum. Another case of the closure of SOEs with huge socioeconomic importance can be found in the logging sector, which was a monopoly business operated by an SOE owned by the provincial government. Established in the early 1950s, the company managed and exploited a large tract of natural forest, employing approximately 40,000 workers and over 30,000 company-dependent retirees. The logging ban forced the SOE to cease most logging operations. Firm closure was not limited to extractive industries but also affected related industries. For example, a major coal-fired power plant was closed because of the lack of coal supply. In the logging sector, almost all wood product factories and furniture factories have been closed, with only a handful surviving by importing wood from overseas.

The overall number of large companies in the extractive industries in Rose City dramatically decreased from 91 in 2018 to 36 in the first half of 2019. Furthermore, the extractive industries in Rose City experienced unprecedented loss-making. In 2018, the coal and iron industries recorded a net loss of 254 and 359 million RMB respectively, while the logging sector made a meager profit of 19.3 million RMB, primarily because of financial support from the central government. These failing companies were not ‘zombie enterprises’ relying on local government support, but healthy enterprises that generated tax revenue for the government. Consequently, local governments suffered significant revenue losses. To take one county government as an example:

Our government this year only had an income of approximately 2 billion RMB, whereas in the past we had around 13 billion RMB. Our expenditure increased to nearly 20 billion RMB. The real problem is that this gap is not disappearing but will become increasingly larger. Our party secretary goes to the provincial government on a weekly basis to seek help. (Representative of a county government)

Large-scale layoffs are inevitable because of the extent of closure and loss of profitability, but reliable job loss statistics are difficult to find. From the interviews, I found that SOEs were more able to withhold massive lay-offs because of better access to government support and a stronger connection to other SOEs, which means that financially stronger SOEs could absorb some surplus labor from their failing counterparts. For example, one of the few iron mining SOEs that still returned a profit acquired 400 staff from the failing logging SOE. Yet, even for these local giants, welfare loss and pay cuts were very

common. At the time of my visit, many workers from the coalmining SOE had not received their salaries for six months. Regarding welfare loss, affected companies commonly stop paying the “Five Insurances” (retirement, medical, unemployment, work-related injury, and child-birth) and the “One Fund” (housing). Workers lose these important social security benefits and face difficulties changing jobs or retiring until being compensated.

The significant issue of job losses inevitably caused tension in the local social fabric. Local officials in charge of the *xinfang* system (an institutionalized mechanism for handling citizen petitioning and providing assistance) were put under enormous pressure. Immense resources and efforts were spent on maintaining social order during this difficult time.

We are working very hard and making sure that our people do not go to Beijing, especially the coal mine workers and the logging workers. For example, we have the case of a man who lost his income. Every day we deliver vegetables and food to his home; when he is sick, we go to the hospital with him, and at night, we park a car outside his house to make sure that he is not going to cause any trouble. (Representative of a county government)

To summarize, the establishment of CEIT has been shown to strengthen environmental enforcement. In this heightened mode of authoritarian environmentalism, local input has been significantly reduced, and indiscriminate enforcement is quickly applied to the offenders. As a local official admits, “the reality now is that central policy must be carried out regardless of the local situation. You must speak politics; you must follow the line of the country”. However, this can produce severe local impacts in extractive regions and create new governance challenges.

4. What is the future for the extractive regions?

Although authoritarian environmentalism and the establishment of CEIT have an immediate and significant negative socioeconomic impact in extractive regions, their long-term future depends more on the successful development of alternative economic activities. However, this transformation process is highly difficult because of two challenges.

4.1. Authoritarian environmentalism as a transformation barrier

A long-term approach is necessary for extractive regions to prepare for the post-extractive future (Andrews-Speed et al., 2005; He et al., 2017; Li et al., 2015). Commonly proposed transformation strategies, such as developing infrastructure, stimulating alternative economic activities, and educating and training the local workforce to develop new skills, require time and resources and must be realized when the extractive economy is still functioning. However, empirical studies have found that extractive regions in China typically lag in transformation preparation work. Consequently, as the CEIT introduces sudden core economy disruptions, extractive regions find it difficult to implement transition strategies.

In Rose City, for example, enterprises and government are ill-prepared for transformation, and the negative economic impact of environmental enforcement makes it nearly impossible for local enterprises and the government to adapt. Local companies that did not collapse need to develop and implement transition strategies that typically involve changing core business strategies. For example, because of the coal-mining ban, many coal companies in Rose City attempted to transition to other businesses, such as mineral water extraction and ecotourism. However, attempts to reinvent existing enterprises are very difficult because of the poor financial state of enterprises, which limits the ability to make investments.

The enterprise currently has no income, and the compensation money received from the central government is barely enough for us

to survive. We do not have the ability to develop new business opportunities. To do so, you need to make heavy capital investment, and the payback period can be very long. We need subsidies from the government or long-term low-interest loans from banks to be able to do something. (Representative of the logging SOE)

Furthermore, strict environmental enforcement has scared companies from taking action, posing further policy barriers to transition. Companies developing transition strategies often find that their options are severely constrained as they exercise great care not to violate environmental regulations. For example, a company representative commented as follows:

As we are not allowed to log our forest, we want to develop forestry tourism. However, to do so, we need to build infrastructure such as walkways through the forest. The problem is that no one is willing to do that. What happens if you have to knock down trees when building walkways? You may be held responsible, and there may be consequences. (Representative of the logging SOE)

4.2. Structural barriers to transformation

The transition of extractive regions to a more sustainable economy typically depends on attracting new investments. However, because of the intense competition for capital investment, attracting new industries to the less developed extractive regions is very difficult. In China, there is a longstanding regional disparity in which investment is heavily concentrated in the coastal regions while less-developed, inland regions have been unable to attract investment (Broadman and Sun, 1997). One of the key reasons for this is the introduction of preferential policies in the early reform period, which resulted in the establishment of special economic zones, directing foreign direct investment to coastal areas, especially the Yangtze River Delta, the Pearl River Delta, and the Bohai Rim Region (Enright, 2016). These early investment trends allowed the coastal areas to become more developed with better infrastructure than peripheral regions, further reinforcing their attractiveness as investment destinations. Furthermore, the less developed areas suffer from brain drain, as human resources become concentrated in the wealth coastal regions through internal migration (Chen and Wu, 2019; Li et al., 2020).

These political and economic realities mean that extractive regions cannot compete with coastal regions to attract new investments. These difficulties are highly visible in Rose City. The lack of infrastructure, particularly an industrial park, is a key issue that the local government attempts to overcome. The mountainous location makes finding industrially suitable areas difficult.

One of the difficulties we face in attracting new businesses is that we do not have an industrial park to host factories and businesses. The city center area now has no more vacant land, which means that we need to do resettlement for new projects, which is very difficult. We successfully signed a contract with a business a few years ago, but after three years we still have not been able to find a place for them to build the factory. (Representative of the Municipal Industry and Technology Bureau)

Brain drain and lack of human resources are frequently cited barriers to attracting investment:

We want high-tech businesses, but we do not have human resources. Initially, we planned to attract equipment manufacturing. However, when the business representatives came, the first thing they asked was about hiring workers. The problem is that we do not have technical or managerial skilled workers or even enough non-skilled workers, as most of our young people have already moved away. (Representative of the Municipal Human Resources and Social Security Bureau)

In light of these difficulties, local officials I interviewed typically hoped that the central government could offer more assistance and direct investment in new industries. However, these are unrealistic hopes. Although national investment is one of the primary ways of revitalizing failing extractive economies (Hu and Yang, 2018), the large number of regions in need of investment makes timely attention from Beijing unlikely. Driven by these realities, foreseeable structural decline and population shrinkage will accelerate in many extractive regions of China under the new eco-politics of extractive governance.

5. Discussion and conclusion

Strict command-and-control policies and a non-participatory policymaking process are two hallmarks of authoritarian environmentalism that are not new to China (Ahlers and Shen, 2017). However, while operating under a consensus that environmental issues are secondary to socioeconomic issues, decentralization played a significant role in bringing flexibility to this authoritarian policy process, thus softening its impact on the extractive regions of China. Recently, driven by the goal of achieving an ecological civilization, the central government has been working to strengthen its environmental governance. Because of a shift towards more top-down control, the case of China has further implications for the debate on authoritarian environmentalism. Proponents have argued that authoritarian environmentalism can produce quick and effective, albeit possibly unpopular actions to address severe environmental threats; critics have questioned the capacity of ecologically motivated authoritarianism to impose politically unfavorable environmental reforms (Hobson, 2012; Kwon and Hanlon, 2016; Shahar, 2015). The evidence provided in this study supports some of the proposed merits and shows that the use of power by an authoritarian state to address environmental challenges allows the enforcement of deeply unpopular policies that go against local interests. In contrast, in liberal democracies, tough environmental policies are difficult to introduce because politicians are constrained by electoral cycles and generally averse to adopting unpopular policies (Kwon and Hanlon, 2016). Therefore, democratic environmental governance is often a highly decentralized process characterized by municipal voluntarism (Bulkeley, 2015; Fünfgeld, 2015), and the effectiveness of this fragmented approach has been increasingly questioned (Lo et al., 2020). Given the urgent need to tackle rising environmental and climate challenges, the ability to quickly and effectively devise and implement policy interventions on a large scale is crucial (Lo and Castán Broto, 2019).

However, my case study on extractive regions also shows that authoritarian environmentalism—and hence the eco-civilization project—can produce socially unjust results. The environmental goals of the central government are achieved by creating significant socioeconomic problems. There is a particular lack of consideration for the local impact of top-down environmental enforcement and the alleviation of negative impacts. Rose City may be marginal in the context of a very large country, but its story is common in many less fortunate areas in the vast inland region of China where economic opportunities are not as plentiful as they are in the wealthy coastal areas. Although these regions do not contribute much to the national economy in terms of GDP, they are home to millions of people and, consequently, could present social stability issues that could pose a significant governing challenge to the central government. The government must sustain economic growth in these less developed areas to maintain legitimacy. Therefore, better handling of the local impacts of national environmental policies in the era of heightened authoritarianism could be the key to the long-term future of ecological civilization in China.

Environmental sustainability is a worthy goal but should not place an unfair burden on the extractive regions. The study of the environmental justice and politics of extractive regions, therefore, should not be limited to unequal ecological exchange, because ending resource exploitation does not necessarily translate to better outcomes. In fact,

the findings suggest that extractive communities bear the greatest burden of both environmental exploitation and environmental protection. Thus, we need to develop governance mechanisms and structures that can achieve environmental sustainability in a socially just manner (Agrawal et al., 2018; Forsyth, 2008; Magdoff, 2011). Of particular interest is exploring how the government can enhance its policymaking process to incorporate more local voices within the ecological civilization framework, thus avoiding the unfair burden that environmental policies can place on disadvantaged individuals and communities. Furthermore, in Chinese political systems, with resources highly concentrated at higher levels of government, a successful transition depends on national government initiatives. For example, the transformation of Fuxin from a coal town to a manufacturing hub of wind power equipment was primarily because of massive investment by the central government to develop new industries (Hu and Yang, 2018). The vertical and horizontal diversification of Daqing from oil extraction to petrochemical industries and mining technology service industries, respectively, was only possible with investment and support from the central SOEs backed by the central government (Li et al., 2015). These case studies show that the central government needs to provide stronger policy support and pump more investment into extractive regions of China that are facing difficulties with the consequences of authoritarian environmentalism. Further research on strengthening the local capacity by generating place-based actions to achieve a sustainable transition is also important.

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References

- Agrawal, A., Hajjar, R., Liao, C., Rasmussen, L.V., Watkins, C., 2018. Editorial overview: forest governance interventions for sustainability through information, incentives, and institutions. *Curr. Opin. Environ. Sustain.* 32, 1–7.
- Ahlers, A.L., Heberer, T., Schubert, G., 2016. Whither local governance in contemporary China? Reconfiguration for more effective policy implementation. *J. Chin. Gov.* 1, 55–77.
- Ahlers, A.L., Shen, Y., 2017. Breathe Easy? Local nuances of authoritarian environmentalism in China's battle against air pollution. *China Q.* 234, 299–319.
- Andrews-Speed, P., Ma, G., Shao, B., Liao, C., 2005. Economic responses to the closure of small-scale coal mines in Chongqing, China. *Res. Policy* 30, 39–54.
- Arsel, M., Hogenboom, B., Pellegrini, L., 2016. The extractive imperative and the boom in environmental conflicts at the end of the progressive cycle in Latin America. *Extr. Ind. Soc.* 3, 877–879.
- Ben, J.H., Li, X., Duncan, K., Xu, J., 2020. Corporate relationship spending and stock price crash risk: evidence from China's anti-corruption campaign. *J. Bank. Financ.* 113, 105758.
- Bisht, A., Gerber, J.-F., 2017. Ecological distribution conflicts (EDCs) over mineral extraction in India: an overview. *Extr. Ind. Soc.* 4, 548–563.
- Bond, C.J., Kirsch, P., 2015. Vulnerable populations affected by mining: predicting and preventing outbreaks of physical violence. *Extr. Ind. Soc.* 2, 552–561.
- Broadman, H.G., Sun, X., 1997. The distribution of foreign direct investment in China. *World Econ.* 20, 339–361.
- Bulkeley, H., 2015. Can cities realise their climate potential? Reflections on COP21 Paris and beyond. *Local Environ.* 20, 1405–1409.
- Chen, C., Wu, Y., 2019. Interregional impact of foreign direct investment on China's inland urbanization. *Singap. Econ. Rev.* 64, 997–1017.
- Chien, S.-S., Hong, D.-L., 2018. River leaders in China: party-state hierarchy and transboundary governance. *Polit. Geogr.* 62, 58–67.
- Chung, J.H., 2000. *Central Control and Local Discretion in China: Leadership and Implementation During Post-Mao Decollectivization*. Oxford University Press, Oxford.
- Constantinescu, I.P., 2012. Shrinking cities in Romania: former mining cities in Valea Jiului. *Built Environ.* 38, 214–228.
- Eaton, S., Kostka, G., 2014. Authoritarian environmentalism undermined? Local leaders' time horizons and environmental policy implementation in China. *China Q.* 218, 359–380.
- Enright, M.J., 2016. *Developing China: The Remarkable Impact of Foreign Direct Investment*. Routledge.
- Faruque, M.O., 2018. The politics of extractive industry corporate practices: an anatomy of a company-community conflict in Bangladesh. *Extr. Ind. Soc.* 5, 177–189.
- Forsyth, T., 2008. Political ecology and the epistemology of social justice. *Geoforum* 39, 756–764.

- Foster, J.B., Holleman, H., 2014. The theory of unequal ecological exchange: a Marx–Oudum dialectic. *J. Peasant Stud.* 41, 199–233.
- Freudenburg, W.R., 1992. Addictive economies: extractive industries and vulnerable localities in a changing world economy. *Rural Sociol.* 57, 305–332.
- Fünfgeld, H., 2015. Facilitating local climate change adaptation through transnational municipal networks. *Curr. Opin. Environ. Sustain.* 12, 67–73.
- Gare, A., 2012. China and the struggle for ecological civilization. *Capital. Nat. Soc.* 23, 10–26.
- Gilley, B., 2012. Authoritarian environmentalism and China's response to climate change. *Env. Polit.* 21, 287–307.
- Guo, F., Lo, K., Tong, L., 2016. Eco-efficiency analysis of industrial systems in the Songhua River Basin: a decomposition model approach. *Sustainability* 8, 1271.
- Hansen, M.H., Li, H., Svarverud, R., 2018. Ecological civilization: interpreting the Chinese past, projecting the global future. *Global Environ. Change* 53, 195–203.
- He, S.Y., Lee, J., Zhou, T., Wu, D., 2017. Shrinking cities and resource-based economy: the economic restructuring in China's mining cities. *Cities* 60, 75–83.
- Heilmann, S., 2008. From local experiments to national policy: the origins of China's distinctive policy process. *China J.* 59, 1–30.
- Heurtebise, J.-Y., 2017. Sustainability and ecological civilization in the age of Anthropocene: an epistemological analysis of the psychosocial and “culturalist” interpretations of global environmental risks. *Sustainability* 9, 1331.
- Hobson, C., 2012. Addressing climate change and promoting democracy abroad: compatible agendas? *Democratization* 19, 974–992.
- Hornborg, A., Martinez-Alier, J., 2016. Ecologically unequal exchange and ecological debt. *J. Political Ecol.* 23, 328–333.
- Hsu, A., Yeo, Z.Y., Weinfurter, A., 2020. Emerging digital environmental governance in China: the case of black and smelly waters in China. *J. Environ. Plan. Manag.* 59, 14–31.
- Hu, X., Yang, C., 2018. Building a role model for rust belt cities? Fuxin's economic revitalization in question. *Cities* 72, 245–251.
- Hua, F., Xu, J., Wilcove, D.S., 2018. A new opportunity to recover native forests in China. *Conserv. Lett.* 11, e12396.
- Jia, K., Chen, S., 2019. Could campaign-style enforcement improve environmental performance? Evidence from China's central environmental protection inspection. *J. Environ. Manage.* 245, 282–290.
- Jiang, Q., Yang, S., Tang, P., Bao, L., 2020. Promoting the polluters? The competing objectives of energy efficiency, pollutant emissions, and economic performance in Chinese municipalities. *Energy Res. Soc. Sci.* 61, 101365.
- Kostka, G., 2016. Command without control: the case of China's environmental target system. *Regul. Gov.* 10, 58–74.
- Kostka, G., Hobbs, W., 2012. Local energy efficiency policy implementation in China: bridging the gap between national priorities and local interests. *China Q.* 211, 765–785.
- Kostka, G., Zhang, C., 2018. Tightening the grip: environmental governance under Xi Jinping. *Env. Polit.* 27, 769–781.
- Kwon, K.L., Hanlon, R.J., 2016. A comparative review for understanding elite interest and climate change policy in China. *Environ. Dev. Sustain.* 18, 1177–1193.
- Landry, P.F., 2008. *Decentralized Authoritarianism in China*. Cambridge University Press, New York.
- Le Billon, P., Good, E., 2016. Responding to the commodity bust: downturns, policies and poverty in extractive sector dependent countries. *Extr. Ind. Soc.* 3, 204–216.
- Lei, Z., Mol, A.P., Shuai, Y., 2017. Environmental information disclosure in China: in the era of informatization and big data. *Front. Law China* 12, 57–75.
- Li, H., Lo, K., Wang, M., 2015. Economic transformation of mining cities in transition economies: lessons from Daqing, Northeast China. *Int. Dev. Plan. Rev.* 37, 311–328.
- Li, H., Lo, K., Zhang, P., 2020. Population shrinkage in resource-dependent cities in China: processes, patterns and drivers. *Chin. Geogr. Sci.* 30, 1–15.
- Li, J., Wang, X., 2012. Energy and climate policy in China's twelfth five-year plan: a paradigm shift. *Energy Policy* 41, 519–528.
- Liu, N.N., Lo, C.W.H., Zhan, X., Wang, W., 2015. Campaign-style enforcement and regulatory compliance. *Public Adm. Rev.* 75, 85–95.
- Lo, K., 2014a. China's low-carbon city initiatives: the implementation gap and the limits of the target responsibility system. *Habitat Int.* 42, 236–244.
- Lo, K., 2014b. A critical review of China's rapidly developing renewable energy and energy efficiency policies. *Renew. Sustain. Energy Rev.* 29, 508–516.
- Lo, K., 2015. How authoritarian is the environmental governance of China? *Environ. Sci. Policy* 54, 152–159.
- Lo, K., 2020. Governing energy consumption in China: a comprehensive assessment of the energy conservation target responsibility system. *Energy Transit.* 4, 57–67.
- Lo, K., Castán Broto, V., 2019. Co-benefits, contradictions, and multi-level governance of low-carbon experimentation: leveraging solar energy for sustainable development in China. *Global Environ. Change* 59, 101993.
- Lo, K., Li, H., Chen, K., 2020. Climate experimentation and the limits of top-down control: local variation of climate pilots in China. *J. Environ. Plann. Manag.* 63, 109–126.
- Lockie, S., Franetovich, M., Petkova-Timmer, V., Rolfe, J., Ivanova, G., 2009. Coal mining and the resource community cycle: a longitudinal assessment of the social impacts of the Coppabella coal mine. *Environ. Impact Assess. Rev.* 29, 330–339.
- Ma, B., Zheng, X., 2016. Biased data revisions: unintended consequences of China's energy-saving mandates. *China Econ. Rev.* 48, 102–113.
- Magdoff, F., 2011. Ecological civilization. *Mon. Rev.* 62, 1–25.
- Martinez-Fernandez, C., Wu, C.t., Schatz, L.K., Taira, N., Vargas-Hernández, J.G., 2012. The shrinking mining city: urban dynamics and contested territory. *Int. J. Urban Reg. Res.* 36, 245–260.
- Naughton, B., 2017. The General Secretary's extended reach: xi Jinping combines economics and politics. *China Leadersh. Monit.* 54, 1–10.
- Price, L., Levine, M.D., Zhou, N., Fridley, D., Aden, N., Lu, H., McNeil, M., Zheng, N., Qin, Y., Yowargana, P., 2011. Assessment of China's energy-saving and emission-reduction accomplishments and opportunities during the 11th Five Year Plan. *Energy Policy* 39, 2165–2178.
- Ran, R., 2013. Perverse incentive structure and policy implementation gap in China's local environmental politics. *J. Environ. Policy Plan.* 15, 17–39.
- Ross, M.L., 2019. What do we know about export diversification in oil-producing countries? *Extr. Ind. Soc.* 6, 792–806.
- Shahar, D.C., 2015. Rejecting eco-authoritarianism, again. *Environ. Values* 24, 345–366.
- Shen, L., Gunson, A.J., 2006. The role of artisanal and small-scale mining in China's economy. *J. Clean. Prod.* 14, 427–435.
- Tan, J., Lo, K., Qiu, F., Zhang, X., Zhao, H., 2020. Regional economic resilience of resource-based cities and influential factors during economic crises in China. *Growth Change* 51, 362–381.
- Van Rooij, B., 2006. Implementation of Chinese environmental law: regular enforcement and political campaigns. *Dev. Change* 37, 57–74.
- Wang, A.L., 2018. Symbolic legitimacy and Chinese environmental reform. *Environ. Law* 48, 699–760.
- Wang, S., 2017. Xi Jinping's centralisation of Chinese foreign policy decision-making power. *East Asian Policy* 9, 34–42.
- Wang, Z., Zeng, J., 2016. Xi Jinping: the game changer of Chinese elite politics? *Contemp. Politics* 22, 469–486.
- Wu, J., Zuidema, C., Gugerell, K., de Roo, G., 2017. Mind the gap! Barriers and implementation deficiencies of energy policies at the local scale in urban China. *Energy Policy* 106, 201–211.
- Wu, R., Hu, P., 2019. Does the “miracle drug” of environmental governance really improve air quality? Evidence from China's system of central environmental protection inspections. *Int. J. Environ. Res. Public Health* 16, 850.
- Yu, Y., Feng, K., Hubacek, K., 2014. China's unequal ecological exchange. *Ecol. Indic.* 47, 156–163.
- Zhao, X., Wu, L., 2016. Interpreting the evolution of the energy-saving target allocation system in China (2006–13): a view of policy learning. *World Dev.* 82, 83–94.
- Zhu, J., Huang, H., Zhang, D., 2019. “Big tigers, big data”: learning social reactions to china's anticorruption campaign through online feedback. *Public Adm. Rev.* 79, 500–513.