

**What Makes for Good and Bad Neighbours?
An Emerging Research Agenda in the Study of Chinese Environmental Politics**

Sarah Eaton & Genia Kostka

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Abstract: Tackling China's grave environmental problems increasingly turns on questions of sub-national interjurisdictional relations. What are the conditions under which neighbouring localities cooperate in stewardship of the natural environment? What factors give rise to interjurisdictional conflict such as pollution spillovers? Through a combination of empirical and theoretical reflections a research agenda to better understand these issues is outlined. First, China's recent innovative approaches to the promotion of interjurisdictional cooperation are examined. An in-depth case study of interjurisdictional ecological protection 'redline' zones underscores the difficulties of inculcating environmental neighbourliness between local governments. Yet a precise diagnosis of the problem remains elusive because too little is known about the underlying drivers of interjurisdictional relations in China. An analytical framework that draws insight from contemporary China studies and comparative environmental governance scholarship is offered for the study of interjurisdictional environmental relations in China.

Keywords: transboundary pollution; central-local relations; interjurisdictional relations; environmental federalism; China

Corresponding author: Sarah Eaton: seaton@uni-goettingen.de

Introduction

While China's 'environmental authoritarianism' has attracted admirers in recent years (Beeson 2010), its top-down command and control system has noted deficiencies with regard to the management of interjurisdictional environmental issues. Environmental governance in China is organized primarily along a vertical axis that links the centre to local governments through lines of leadership accountability and fiscal dependency. While leaders in Beijing have an undeniably powerful hand in nudging local officials in this or that direction as national policy priorities evolve, these top-down incentives are ultimately of limited use in shaping relations *across* local jurisdictions. Given the gravity of transboundary pollution problems in China—a key factor behind China's enduring water and air quality crises¹—curbing interjurisdictional conflict and promoting environmental cooperation between local governments are tasks of critical importance. What are the conditions under which localities cooperate or conflict over environmental issues? How might local-local relations be directed towards cooperation?

Here, we approach these questions through a combination of empirical and theoretical reflection. In a first empirical section, we analyze the strengths and weaknesses of China's top-down approach to environmental governance before turning to analysis of several of the state's innovative recent efforts to promote interjurisdictional cooperation. We provide an in-depth, interview-based case study of one particularly significant initiative: the establishment of ecological protection

¹ For instance, Beijing's efforts to curb soaring PM 2.5 pollution have faltered because emissions are largely blown in from household coal burners and coal-fired power plants in neighboring provinces, principally Hebei. Likewise, a 'pollute thy neighbor' strategy contributes to extreme water pollution problems in China's waterways (Cai *et al.* 2016).

‘redline’ zones across China.² In such zones, selected on the basis of their ecological importance, environmentally harmful forms of economic activity are to be phased out and replaced by ‘ecological economies.’ Since redline zones typically encompass multiple localities, the willingness of local officials to cooperate with neighbours will ultimately be decisive to the success or failure of this initiative. While the case brings to light significant enduring barriers to interjurisdictional cooperation, we find that there is still too little known about the fundamental drivers of local-local relations to provide a more precise diagnosis of the problem. In the interests of generating further research on this topic, we sketch a framework for analysis that conceives of interjurisdictional relations as a function of four variable categories: political institutions; local leadership traits; characteristics of local business and civil society; and, structural factors (geographic density and group size).

Environmental governance on a vertical axis

The dominance of vertical lines in the practice of environmental governance is an effect of China’s distinctive and, in many respects, highly effective version of authoritarianism. A system of ‘regionally decentralized authoritarianism’ (RDA) system, or ‘market-preserving federalism,’ has been credited with providing the ‘fundamental institutions’ behind the PRC’s miracle growth in the period of reform and opening since 1978 (Xu 2011, Landry 2008, Weingast 1995). Scholars attribute particular importance to China’s Leninist political institutions, above all the cadre target

² We conducted 11 interviews in October 2016 and May 2017 with well-placed representatives from research institutions, central ministries, local governments as well as NGOs involved with the policy design and implementation of ecological ‘redline’ zoning. We also interviewed policy implementers in Shanxi province to get a better understanding of what factors drive cooperation or competition in local-local relations.

responsibility system, as promotion-hungry local officials proved responsive to the centre's signals encouraging economic development after Mao's death (Edin 2003). According to proponents of political tournament theory, local cadres engage in various forms of competitive behaviour in order to outperform rivals vying for promotion to the next administrative level (Li and Zhou 2005). Since economic performance has, until quite recently, been most heavily weighted in formal cadre evaluation processes, officials are seen as striving to outperform their competitors on Gross Domestic Product (GDP) growth rates, as evidenced in strategic investment competition between cities (Yu *et al.* 2016).³ Other applications of the theory have found tournament dynamics behind local revenue collection patterns (Lü and Landry 2014), rapid urbanization (Xu and Zhou 2013), spatially uneven local debt levels (Pan *et al.* 2016) and even the number of coal miner deaths in different localities (Shi and Xi 2018).

As environmental issues have risen up the political agenda, China's political leaders have continuously modified the target system in the effort to shift local officials away from the prevailing 'growth-at-all-costs' mindset. By introducing binding environmental targets to China's Five Year Plans, the government aims to induce local officials to prioritize environmental protection alongside economic growth (Heberer and Senz 2011). Alongside green targets, the centre has rolled out thousands of competitive funding schemes to encourage revenue-poor local governments to pursue greener forms of growth. The state's efforts to dismantle growth-at-all-costs institutions and establish the foundations of an 'ecological civilization' (生态文明) have already delivered some benefits—e.g. in the form of energy efficiency improvements and a

³ It bears noting that the GDP tournament thesis has been challenged by scholars who find that economic performance is, in fact, not decisive in promotion decisions and point to other factors, especially factional ties, as relatively more important (Shih *et al.* 2012). A recent paper concludes that economic performance has a positive effect on cadre promotion at lower levels of government (county level) but not at higher levels (prefectural and provincial levels) (Landry *et al.* 2017).

more diversified energy mix due to the promotion of renewable energies—but the unanticipated downsides of entrenched local competition have also frustrated planners’ efforts to reverse China’s grave environmental crisis. For instance, one study has found that the introduction of more stringent water quality regulations actually encouraged local officials to adopt a ‘pollute thy neighbor’ strategy (Cai *et al.* 2016).

Reform-era institutions designed to capture the benefits of local competition appear to have had some unintended negative consequences for transboundary environmental management, but mistrust and conflict at local levels also has other sources. Scholars of the late Maoist and early reform period observed a pattern of ‘cellular’ local state structures that developed in connection with the Maoist emphasis on constructing autarkic economic units as well as introduction of the household registration system (Donnithorne 1972, Shue 1988). These cellular local states, with roots in late Imperial times, drew into themselves and, to varying degrees, became isolated from neighbours. Writing in the late 1980s, Shue (1988, p.13) predicted that the move to marketization under Deng Xiaoping would ultimately yield a more ‘weblike’ structure since these ‘old cell-like communities and bureaucratic units are now being overridden by new systems and organizations that deliberately transcend and link together small localities.’ Marketization has certainly wrought tremendous change within the Chinese polity and economy but the cellular local state has proven to be more resilient than expected, as evidenced not least by the persistence of trade barriers and market fragmentation at local levels (Herrmann-Pillath *et al.* 2014, Poncet 2005, Lyons 1985). While historical inheritances and Leninist institutions have each contributed to interjurisdictional environmental conflict in China, there are also parallels to be found in systems of environmental federalism (Monogan *et al.* 2017, Lipscomb and Mobarak

2017, Sigman 2004). This would suggest that local officials' zero-sum thinking is at least partly an effect of China's decentralized features.

Problems of weak connective tissue and fragmentation also hamper relations between government bureaucracies with a role in environmental governance. Research on China's incipient Transboundary Management Organizations has consistently highlighted the problems caused by turf wars between rival ministries (Moore 2014; Cao *et al.* 2015), evidence of the persistence of 'fragmented authoritarianism' in the environmental policy field (Lieberthal and Oksenberg 1988; Mertha 2009).

Policy Innovation to Promote Interjurisdictional Cooperation

In recent years, various efforts have been made to build out China's environmental state in the horizontal plane. With growing pressure to address severe air pollution across China, for example, *ad hoc* transboundary governance arrangements to improve air quality have been established. In 2013, the Environmental Protection Bureaus (EPBs) in Shanghai, Zhejiang, Anhui and Jiangsu provinces together initiated the Yangtze River Delta (YRD) *Trans-Boundary Environmental Pollution Emergency Response Plan* (Kostka 2014, Kahn and Zheng 2016).⁴ And in 2013, China's State Council initiated the *Action Plan of Air Pollution Prevention and Control* (APAP) to tackle air pollution in the Beijing-Tianjin-Hebei Provinces (JJJ area), the Yangtze River Delta (YRD) and the Pearl River Delta (PRD). The *Plan* sets

⁴Under this new interjurisdictional cooperation, provincial governments pledged to share environmental protection resources and jointly investigate and address transboundary pollution incidents (Kahn and Zheng 2016).

cross-provincial regional targets for particulate matters and coal use for the three regions (China State Council 2013). By year end 2017, a cross-regional anti-pollution organization had also been set up for the Beijing-Tianjin-Hebei area (Reuters 2017). A recent study finds that while the central government's practice of tying financial transfers to the implementation of the APAP initiative is an effective inducement, transfers are not always put to good use because of insufficient personnel allocations across different levels of government (Wong and Karplus 2017).

Cross-regional efforts to curb water pollution have also gained prominence. With regard to management of China's waterways, all seven of the largest interjurisdictional rivers have river basin commissions. Yet the commissions have often struggled to effectively coordinate across political boundaries. Partly this is an effect of a high degree of bureaucratic fragmentation in water governance (Moore 2014, da Silveira and Richards 2013). In the context of much jostling for power between rival ministries and provincial authorities, the commissions have not developed sufficient authority to effectively induce or enforce cooperation across political boundaries and they function, in practice, primarily as 'hydro-technical agencies' devoted to water conservancy (Huang and Xu 2017, p. 425).

China's environmental bureaucracy is also trying to expand its horizontal reach. In 2006, the Ministry of Environmental Protection (MEP) established six regional supervision centres to resolve trans-jurisdictional pollution disputes. These centres act as representatives of MEP and have the administrative status of an MEP department. Each centre supervises local governments and EPBs in three to seven provinces or provincial-level municipalities (i.e., Beijing, Shanghai, Tianjin, and Chongqing). Recent research suggests that these centres have played a critical role in verification of air pollution targets specified in the 11th Five-Year Plan (FYP). The accuracy of

collected data improved and the number of local inspection visits increased (Zhang X.H. 2017). Yet, there is reportedly still significant room for improvement in data quality assurance processes (Zhang X.H. 2017).

A second strategy employed by the state draws on the considerable power of the Communist Party hierarchy in the effort to improve interjurisdictional environmental management. In water governance, for example, higher-ranked cadres in large administrative units covering interjurisdictional river basins now receive targets for water quality that play an important role in formal processes of performance review and promotion consideration (Chien and Hong 2017). Under the ‘one river, one leader’ system, formalized in a 2009 MEP document, higher-ranked cadres at the provincial or municipal level are designated as ‘river chiefs’ (河长) and are to manage lower-level cadres responsible for tributaries that flow into the river basin overseen by the ‘river chief’. In Yunnan, for example, the provincial Party Secretary was named the river chief of Fuxian Lake, Yunnan’s biggest freshwater lake, while the provincial Governor was made river chief of Erhai Lake, Yunnan’s second biggest freshwater lake. In 2017, MEP and the Ministry of Water Resources expanded this system and jointly issued implementation guidelines to local governments. Zhang Bo, the MEP’s Director General of Water Environment Management characterized the policy as a shift of accountability from the government to Party organizations:

The core idea is to enable the Party committees and governments at all levels to assume the main responsibility for protecting the environment, and to be more specific, to assign a leading Party/government official to take charge of the pollution control of a certain river segment (Zhang B. 2017).

Recent experimentation on the river chief system has shown mixed results. In Yunnan, shifting the accountability of Erhai water management to the provincial Governor led to an aggressive cleanup campaign called ‘Rescuing Erhai Lake.’ As part of this campaign, more than 1,800 businesses, mainly hotels and restaurants on the lake, were ordered to close while a new sewage system is built (Caixin 2017).

Although this system appears to be effective in focusing top leaders’ attention on environmental problems in circumstances of crisis, there are also downsides to leaning so heavily on Party mechanisms. In particular, there is a precariousness in pinning river management to individuals given the considerable variance in the propensity and capacity of leaders to play this role effectively. At present, mixed signals about government priorities amid what the government describes as the ‘new normal’ (新常态) of slower growth means that some leaders may interpret prioritization of economic growth above environmental protection to be the safer bet politically. Others, particularly local leaders rotated in from other regions of China, may lack the personal networks with local officials needed to effectively resolve conflict between neighbouring localities. Recent research on management of the Dian Lake watershed underscores the risks. Although water quality improved remarkably under the tenure of river chief Qiu He, the charismatic Party Secretary of Kunming from 2007 to 2011, pollution levels subsequently surged after he was promoted out of Kunming (Chien and Hong 2017).

Case Study: Ecological ‘Redlines’ and the Limited Reach of Top-Down Mechanisms

We now turn to a detailed case study of what is arguably the most ambitious of the state's recent efforts to lay the groundwork for effective environmental protection across jurisdictions, namely the establishment of interjurisdictional ecological protection zones. China's recent national zoning initiative has, as one of its many aims, curbing transboundary pollution and enhancing environmental cooperation between local governments. State planners are, quite literally, drafting a new map of China's environmental state in which ecological protection 'redlines' (生态保护红线) demarcate regions in which industrial activity is to be sharply limited or banned outright from those in which industry will continue to receive a green light. Leading officials in jurisdictions that fall within these redline zones, referred to in some official parlance as Ecological Function Areas (EFAs) (生态功能区), face an immense challenge in satisfying the centre's twin goals of both halting environmental degradation in key ecological areas while securing poverty alleviation and sustainable development goals (Ministry of Environmental Protection 2007). Because redline zones typically incorporate multiple administrative jurisdictions, the success or failure of this initiative will turn, in no small measure, on the willingness of local officials to work more closely and cooperatively with neighbors. To date, the implementation process has focused primarily on establishing vertical lines of accountability between central and local officials and attention to horizontal relations between localities remains a matter of secondary importance.

The state's approach to implementation of this initiative typifies the top-down, command and control style characteristic of China's environmental governance. After almost a decade of extensive centrally-administered policy experimentation involving

numerous government ministries and policy advisory bodies,⁵ the centre's powerful economic planning body, the National Development and Reform Commission (NDRC), released its authoritative national zoning plan in 2011, the *National Function-Oriented Zone Plan*. The Plan differentiates areas in which development is to continue full-throttle from those in which ecological protection is top priority in a system of four zoning categories: 'development-optimized', 'development-prioritized', 'development-restricted' and 'development-prohibited'. Ecological redline zones are found in the former two categories. Much beyond conservation goals, the NDRC's zoning plan combines a wide range of government priorities including urbanization, industrial upgrading and food security. After release of the national Plan, China's provinces and autonomous regions were tasked with drafting their own zoning plans. With most of the provincial plans now complete, ecological redlines are currently being drawn at the county level, typically around and through the boundaries of several counties. The zoning work is supposed to be completed by 2020 but it remains to be seen whether all regions will make the deadline given the complexity and political difficulty of the process (T. Ma, personal communication, 10 October 2016).⁶ Also contributing delays is confusion at the local level caused by the sheer number of zoning

⁵ This initiative started in the early 2000s in connection with the 'Open up the West' Development Program. In the planning process, the state Premier at the time, Zhu Rongji, is reported to have asked bureaucrats in the environment bureaucracy 'where should China protect land and where can it be developed and urbanized?' (P. Li, personal communication, 13 October 2016). The State Environmental Protection Administration (SEPA) was then tasked with providing the answer and SEPA leaders, in turn, enlisted the help of the Chinese Academy of Sciences (CAS) in conducting research on the topic. SEPA, which later became the Ministry of Environmental Protection (MEP), and CAS initially worked together closely on, first, developing the principles of ecological function zoning and then carrying out early-stage zoning exercises. Under Xi Jinping's leadership, the zoning strategy has risen quickly up the national policymaking agenda (P. Li, personal communication, 13 October 2016). Early in Xi's tenure, the Third Plenum's 'Decision on Some Major Issues Concerning Comprehensively Deepening the Reform' called for the 'strictest possible rules to protect the ecological system,' and a wide range of concrete initiatives in support of zoning were introduced under the 13th Five Year Plan (2016-2020) (P. Li, personal communication, 13 October 2016).

⁶ Names have been changed to preserve the anonymity of our informants.

plans being developed, a consequence of increasing bureaucratic fragmentation in this policy area at the national level.⁷

The state leans heavily on political and financial incentives embedded in the vertically-oriented command and control system to induce officials in the newly-established protected zones to abide by this set of considerably more restrictive rules. ‘Development-restricted’ and ‘development-prohibited’ zones have proven a tough sell at local levels and some protected areas have reportedly been established only on paper such that local officials have simply disregarded the labels applied to them and continued with mining, forestry and other extractive and industrial activities (Xu *et al.* 2016; T. Ma, personal communication, 10 October 2016). Planners have kept close tabs on such implementation problems and have introduced new carrots to induce compliance. Many provinces have made adjustments to the cadre evaluation system to reflect different functional priorities across zones; one interviewee notes that ‘for development-prohibited and –restricted regions, cadre evaluations lay more emphasis on the protection of resources, ecological system and the environment. Criteria on GDP have been loosened and for some zones totally abolished’ (P. Li, personal communication, 13 October 2016). For example, in Shanxi, China’s largest coal-producing region, two counties newly zoned in development-restricted areas received a new set of cadre evaluation criteria from the province reflecting their special status;

⁷A large number of central government ministries are involved with ecological red zone planning and implementation, including MEP, NDRC, the Ministry of Land and Resources (MLR), the Ministry of Water Resources (MWR) and the Ministry of Finance (MoF) (P. Shi, personal communication, 13 November 2016). As the zoning initiative gained prominence in national policymaking, interviewees reported that different ministries tended to work in isolation from each other, developing their own concepts and maps. For instance, while MEP developed the idea of ‘integrated ecosystem management,’ MWR promoted the concept of ‘integrated watershed management,’ approaches that share a basic conceptual framework but were seen as rivals vying to become *the* official conceptual basis for zoning (T. Gao, personal communication, 14 November 2016). The development of these contending approaches generated disagreements about which is ultimately authoritative, considerably slowing the policy process, which took a full ten years to develop from first discussions to concrete plan (T. Gao, personal communication, 14 November 2016).

the revised targets lay heavy weight on air and water quality, rate of water and soil loss, forest coverage, indicators of bio-diversity and place much less emphasis on indicators related to economic performance and urbanization (Y. Niu, personal communication, 10 May 2017).

The primary financial incentive used to induce compliance from local authorities is a system of vertical eco-compensation payments (生态转移支付)⁸ distributed to local governments by the Ministry of Finance (MoF) in Beijing. Transfers are intended, first, to offset any losses to the local economy due to new development restrictions in affected areas and, second, to ensure the maintenance of public services where local government revenues have been adversely affected (P. Li, personal communication, 13 October 2016). The precise amount of funding local governments receive is tied to annual evaluation processes carried out by MEP (P. Wang, personal communication, 14 November 2016). Key criteria for MEP evaluations include whether overall ecosystem health has improved/worsened in the affected region and whether ecological service functions have increased/decreased (P. Wang, personal communication, 14 November 2016). The total volume of funding has expanded considerably over time, from just RMB 6 billion in 2008, in the phase of policy experimentation, to RMB 59 billion in 2016 (P. Li, personal communication, 13 October 2016, P. Wang, personal communication, 14 November 2016).

Our interviewees reported significant misgivings about planners' reliance on these top-down incentives and expressed particular concern about the vertical eco-compensation payment scheme. Although the funding amounts have grown, they are

⁸ 'Eco-compensation' is a catch-all term that refers to a wide variety of programs in China including top-down fiscal transfers of the sort described above, interjurisdictional payment systems (discussed below), payments for ecosystem services (applying to forests, grasslands etc.), payments for ecological functions (linked, for example, to water source conservation) and payments for exploitation of natural sources (Liang 2012, p. 65).

still considered insufficient to truly compensate for economic losses in redline zones (T. Ma, personal communication, 10 October 2016, P. Li, personal communication, 13 October 2016). The transfer method from centre to locality is also seen as problematic. A pervasive lack of transparency about how funds are spent creates opportunities for corruption and also means that money is not always reaching the individuals, such as farmers and herdsman, who most directly bear the losses of living in a protected zone in which their former means of livelihood are no longer permitted (T. Ma, personal communication, 10 October 2016, T. Gao, personal communication, 14 November 2016). One expert and research consultant on environmental governance notes that the manner in which funds are distributed is out-of-step with the transformative ambitions of the redline policy:

[A]lthough there are assessments, local governments have a lot of leeway and freedom in how to use the money. A portion of the money...was sent down in the simplest way—transferred directly to people’s bank accounts—everybody gets a few dozen *Renminbi*. Can it change anyone’s behaviours? No. It is impossible (T. Gao, personal communication, 14 November 2016).

Third, regarding the immense challenges that redline localities face in adjusting or overhauling their industrial structure to comply with new development restrictions and establish ‘ecological economies,’ the same researcher sees ‘compensation in cash as a very negligible and insignificant way to compensate’ (T. Gao, personal communication, 14 November 2016). Fourth, transfers are also often insufficiently tied to any integrated performance measure, effectively weakening the incentive for localities to prioritize environmental protection. One expert emphasized the importance of establishing an

‘early warning system of ecological management’ that would ‘monitor changes in ecological system and changes in social economy at the same time. Many traditional environmental protection projects only carefully monitor changes in ecological systems and it is only recently that experts have begun to experiment with platforms that also monitor changes in social economy’ (T. Gao, personal communication, 14 November 2016). The interviewee emphasized that insufficient attention to laying the foundations of viable ecological economies in redline zones would ultimately doom the zoning exercise to failure since, in the absence of ‘ecological income’, ‘the local community will always be on the opposite side of environmental protection work’ (T. Gao, personal communication, 14 November 2016).

Planners appear to be cognizant that top-down incentives can only do so much in pushing the zoning initiative forward; since redline zones are typically drawn around multiple jurisdictions, local officials will need to establish more cooperative relations with one another in order to achieve zone-wide ecological targets. To this end, planners at higher levels have played a catalyzing role in creating instruments of dispute resolution and cooperation to be employed across localities. Planners hope that horizontal or interjurisdictional eco-compensation payments—transfers across localities of equal rank—will play an increasingly important role as implementation matures. As part of the government’s effort to promote ‘inter-basin regulations’ several regions are currently running pilot projects to experiment with horizontal eco-compensation between provinces.⁹ In the past, provinces relied on central authorities to collect money from one province to compensate another but the central government is now encouraging provinces in the same basin to negotiate directly with each other, not

⁹ These include pilots in the Xijiang River Basin (western tributary of the Pearl River), the Chishui River basin (tributary of upper Yangtze) as well as in Qianjiangyuan (Zhejiang). Gansu province and Shaanxi province have also established an eco-compensation pilot among local governments along the Weihe River which was reported to be a success (P. Wang, personal communication, 14 November 2016).

just about matters of compensation but also about what standard of water quality should be maintained (T. Ma, personal communication, 10 October 2016).

Yet this has proven difficult to implement in practice. First, China's existing transfer system does not support horizontal transfer payments and both a legal basis and a consensus on the optimal way to implement it are still lacking (Asian Development Bank 2016). One major difficulty is that there is no mechanism to compel payments between provinces of equal rank since, typically, no higher authority is designated to oversee such negotiations (Moore 2017). As such, in the pilot projects, central government authorities—typically NDRC or MEP—have come forward to coordinate negotiations between provinces. In one such up/downstream dispute between two cities in Zhejiang, Xi Jinping himself is said to have paved the way for establishment of an eco-compensation arrangement (P. Li, personal communication, 13 October 2016). Beyond watershed management, eco-compensation has, to date, also been tested in marine, wetland and forest areas (Asian Development Bank 2016).

Our case study of China's ambitious ecological redline zoning initiative underscores both the continuing dominance of top-down, command-and-control mechanisms in the environmental governance system as well as the limits of such levers in coming to terms with the considerable transboundary environmental problems China now faces. While planners understandably make use of the tools at hand in employing the significant leverage linked to local officials' ambitions of climbing the political ladder as well as the financial hardships of cash-strapped local governments in pushing forward implementation of this initiative, this top-down approach ultimately does little to directly incentivize environmental cooperation between localities. This is no trivial matter: if local governments cannot develop means of managing environmental and economic issues more cooperatively the initiative will not succeed.

So what are the prospects of local-local environmental cooperation? This is a topic that has attracted surprisingly little attention from scholars by comparison with the large literature analyzing the central-local axis of China's environmental state (Mol and Carter 2006, Ran 2013, Qi and Zhang 2014, Kostka and Nahm 2017). Further, the existing literature on interjurisdictional environmental relations is typically based on the assumptions of political tournament theory which characterizes the environmental behaviour of local governments as a function of local officials' careerism in a zero-sum game of competition with neighbours. In the following, we argue that the political tournament frame obscures what is an inescapably complex reality and sketch the outlines of an approach with the potential to fill some gaps in our understanding of local-local relations in China's environmental state.

A new research agenda for the study of local-local relations

We take the research problem explored above—regarding the limited reach of central-local policy instruments in promoting local-local environmental cooperation—as our point of departure. We contend that the dominant frame for analysis of local-local environmental relations—the political tournament paradigm—is of limited value to analysis of interjurisdictional environmental relations. First, in the ongoing debate about interjurisdictional relations, the focus on competition is only part of the story—what of cooperation? Under what conditions do local governments opt for cooperation with neighbors instead of competition or conflict? The phenomenon of environmental cooperation in China—evident, for example, in the case of the Yangtze River Delta (YRD) Trans-Boundary Environmental Pollution Emergency Response Plan, which joins together four provinces (Kostka 2014)—also demands explanation. Second, the

parsimony of the tournament model has its price. Framing interjurisdictional competition in China narrowly as a function of the behaviours of a wafer thin stratum of promotion-seeking leaders obscures a more complex reality.¹⁰ We sketch the outlines of an analytical framework with the potential to illuminate the complex sources of competitive and cooperative relations between local jurisdictions, an issue of critical importance in the context of China's efforts to achieve a green transformation.

In building this framework, we follow the Social and Ecological Systems (SES) literature (e.g. McGinnis and Ostrom 2014, Berkes *et al.* 2008) in eschewing parsimony for an approach that contends with the innate complexity of the subject matter. We characterize variance in interjurisdictional relations as a function of the interaction between four categories of variables: political institutions; local officials' characteristics and personal networks; bottom-up factors; and structural factors. Next, we briefly outline the framework (see Figure 1 below) and present our rationales for the inclusion of these variables with reference to scholarship drawn from both comparative and China area studies literatures.

Political institutions: top-down signals and coordinating mechanisms

A wide variety of formal and informal 'rules of the game' shape the behaviour of local governments in China. Leading cadres operate in institutionally thick environments in which incentives for cooperation could conceivably trump incentives to export pollution to neighbors. Particularly relevant in this regard are, first, policy signals from upper-level authorities regarding interjurisdictional competition/cooperation and, second, mechanisms for coordination across localities.

¹⁰ As Ang (2016, p. 106) points out, elite officials in the pool of candidates for lateral transfer (rotation) or upward promotion account for only 1% of the government bureaucracy nationwide; the remaining 99% of officials are stationed permanently in the same location.

The relative emphasis that local authorities above the county level (ie. at the municipal or provincial level) place on GDP-based competition varies regionally. Provinces in less-developed inland areas of China tend still to tacitly and overtly encourage growth-at-all-costs competition between localities whereas prosperous coastal provinces have led the way in efforts to forge cooperation across jurisdictions and root out undesirable forms of interjurisdictional competition (van Rooij *et al.* 2017). Thus, we derive the following claim as a starting proposition: *A locality in a region with intense GDP maximization signals is less likely to cooperate with neighboring localities on environmental matters.*

Formal institutions of coordination serve as important means of resolving tensions across political boundaries, whether between nation-states or within national borders (Keohane 2005). In China, interjurisdictional conflicts are, in the first instance, referred to higher-ranked authorities in the Party-state hierarchy for mediation; previous work has found that the absence of such a coordinating role frequently results in the perpetuation of interjurisdictional conflicts (Wu *et al.* 2013). TMOs such as river commissions or cross-regional anti-pollution bodies, are important (if flawed) platforms used to resolve transboundary pollution problems. Thus, we propose that: *A locality under stronger upper-level government coordination is more likely to cooperate with neighboring localities on environmental matters.*

Local officials' characteristics and personal networks

We posit that local officials' political behaviour is significantly more complex and varied than political tournament theory would suggest. Instead of trying to outperform and undercut neighbours, the top leaders in a locality may instead be inclined toward

cooperation depending on such factors as age and pre-existing personal ties to neighbouring counties.

Large numbers of local officials are not actually competing for promotions but are instead standing on the sidelines of the political tournament because their age makes them ineligible for promotion.¹¹ Previous work has found that such ‘terminal’ leaders do not compete with their peers on economic performance with the same intensity as officials still in the running for promotion (Yu *et al.* 2016) and are more inclined to follow a ‘local-oriented career path’ (Gao 2017). Thus, we posit that: *A locality led by a terminal leader/s is less likely to compete with neighboring localities on environmental matters.*

Another factor that conceivably shapes local officials’ disposition toward neighbouring localities is accumulated work experience in neighbouring localities as part of the periodic rotation of leading cadres. Official rationales for the rapid turnover of leading officials at local levels include the attenuation of ‘localism’ and the diffusion of best practices across localities (Eaton and Kostka 2014).¹² Conceivably, rotating officials might also develop personal ties to numerous ‘competitor’ localities in their peer group that weaken their competitive instincts. Accordingly: *A locality led by a leader/s with previous working experience in a neighboring locality is more likely to cooperate with said locality on environmental matters.*

Bottom-up factors: industry and civil society

¹¹ While China’s most senior central-level leaders in the running for appointment to the Standing Committee of the Politburo are typically considered eligible for promotion until age 67, local leaders typically retire much earlier. City leaders, for example, under ordinary circumstances must retire at 60 (Yu *et al.* 2016).

¹² Central authorities in China see periodic rotation of local officials (typically every three to four years) as a tool to enhance control and monitoring. Auxiliary justifications include cadre training, diffusion of local policy innovation and bridging administrative gaps (Eaton and Kostka 2014).

Several literatures within the field of Chinese politics point to a common conclusion: local state policies and practices are shaped not just by top-down political institutions but also by bottom-up factors. In particular, research on public goods provision at village level has consistently found that officials respond not only to incentives from political superiors but also to informal pressures from within their immediate social environs (Tsai 2007, Newland 2016). Relatedly, scholars have documented the growing influence of business interests and civil society in local state politics.

Peter Lorentzen and colleagues' work (2013) on the 'local protectionism' of polluting firms suggests that a locality's industrial structure is a crucial factor in pushing localities toward either clientelism (Paik and Baum 2014, Ong 2012) or a more benign corporatism (Oi 1992). Specifically, cities in which a single firm accounts for a large proportion of local economic activity were found to be significantly more likely to block implementation of environmental transparency initiatives (Lorentzen *et al.* 2013). Similarly, Eaton and Kostka (2017) found that when it comes to the enforcement of environmental regulations, local EPBs are often no match for large state-owned enterprises often protected by local officials and benefitting from a degree of 'central protectionism' owing to their political influence in Beijing. Given this demonstrated reluctance to comply with environmental rules, these 'industrial giants' may also be inclined to pass on their pollution to neighboring localities when possible instead of investing in emissions reduction. Thus, we posit that: *A locality in which a single firm plays a dominant role is less likely to cooperate with neighboring localities on environmental matters.*

Recent work finds that Chinese officials have adopted a degree of openness toward civil society, in spite of their misgivings about the political consequences of doing so (Teets 2013, Hildebrandt 2013). Environmental non-governmental organizations

(NGOs) and activists have led successful grassroots campaigns leading to policy change on a range of issues including endangered species protection, opposition to dam-building and air pollution initiatives (Zhang and Barr 2013, Ho and Edmonds 2008). Research from other countries has found that strong coalitions of concerned citizens, civic associations and NGOs may counterbalance economic interests pushing for lax local enforcement of environmental regulations (Kim 2011, Sabatier and Weible 2007). Thus: *A locality in which NGOs play a role is more likely to cooperate with neighboring localities on environmental matters.*

Structural factors

The Urban Studies literature emphasizes the salience of structural factors in shaping the potential for collective action between local governments (Feiock 2004). Group size and geography appear especially important (Post 2004). Following Olson (1965), small groups are most conducive to cooperation, partly since monitoring the behaviour of other members is relatively straightforward, making it easy to penalize shirking and non-compliance. Geographic density has also been found to be significant: it is easier for time- and resource-constrained actors to traverse shorter distances to meet with counterparts. For the purposes of this research, a ‘group’ refers to local governments that are overseen by an upper-level of government—such as all the counties in a municipality or all the municipalities in a province. Accordingly, we derive the following two propositions: *Environmental cooperation is more likely within smaller local government groupings; and environmental cooperation is more likely within geographically dense local government groupings.*

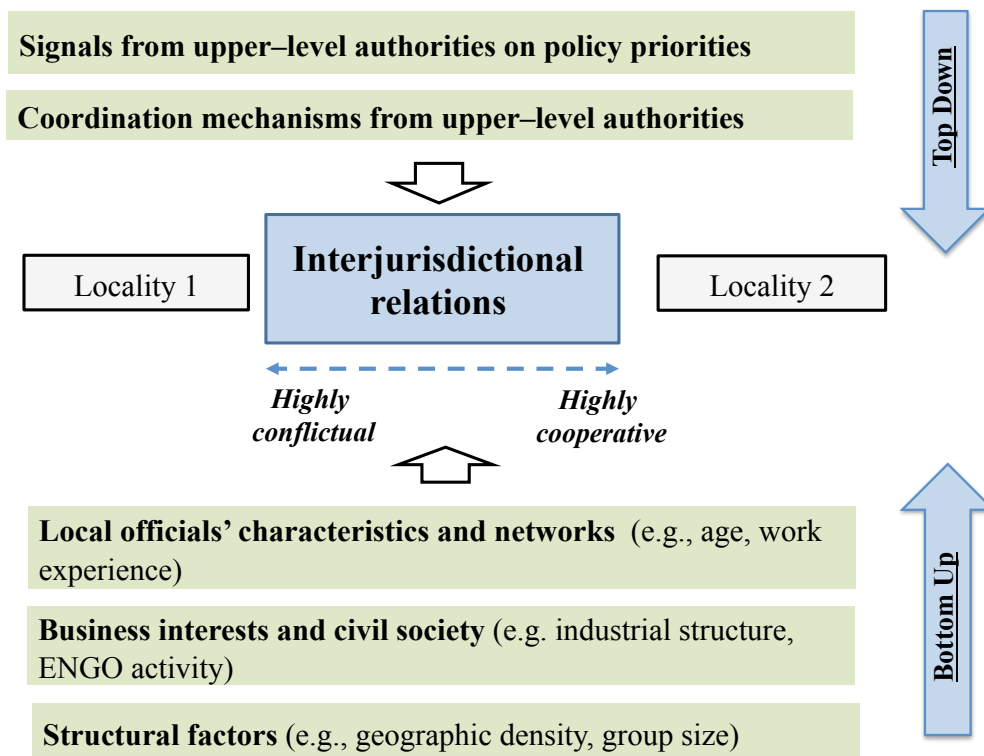


Figure 1: Framework for analysis of interjurisdictional environmental relations

We see the analytical framework sketched above as a starting point for future research in this critical and under-researched area. A next step will be to employ mixed methods of analysis to test the hypotheses outlined here. The results of this empirical work will, in turn, be of use in revising and tightening the analytical framework in the interests of ultimately developing an encompassing theory of interjurisdictional relations that specifies the causal relationships connecting core variables. Research in this vein has much potential to generate findings of interest for both scholars of environmental politics and practitioners trying to push China off the path of growth-at-all-costs towards sustainability and efficiency. Likewise, scholars of environmental federalism may find this theory-building exercise useful in analysis of interjurisdictional environmental relations in other countries.

Conclusion

We have argued that an environmental authoritarianism built along a vertical axis has inherent limitations in resolving problems of transboundary pollution and resource exhaustion. It is certainly true that the central state's use of powerful tools of environmental policy implementation such as the cadre management system has, in certain cases, resulted in quite rapid change at local levels, as with the striking energy efficiency improvements that followed implementation of China's first 'green' Five Year Plan in 2006. Yet, such approaches based on political hierarchies extending down from Beijing seem to be most effective when the biophysical environment is more or less contained by the political boundaries for which the responsible official is answerable. As we know, such conditions are more the exception than the rule. Certainly the air and water quality crises China now faces are inescapably matters to be dealt with on an interjurisdictional basis. The centre is by no means unaware of this problem and we have seen Beijing devise many important policy innovations in recent years, such as the establishment of interjurisdictional anti-pollution bodies under the auspices of MEP and the 'river chief' system within the Communist Party hierarchy. The ambitious redline initiative discussed here takes matters a step further by trying to rationalize China's man-made administrative boundaries with those of the ecosystems given by nature. As our analysis has shown, however, the implementation challenges facing all these efforts to build out China's environmental state in the horizontal plane are considerable. Our case study of the redline initiative finds that while state planners have turned to familiar tools of regional decentralized authoritarianism in trying to elicit

buy-in from local governments, Beijing's powers are strikingly limited when it comes to inculcating environmental neighbourliness at local levels.

It would appear, then, that much of the action in Chinese environmental politics will take place in the horizontal plane in coming years. But what are the fundamental drivers of local-local environmental relations? What conditions give rise to transboundary pollution? And what circumstances attenuate interjurisdictional environmental conflict? The answers to this question remain elusive because we simply know too little about the starting points of interjurisdictional relations. In the interests of nurturing a new research programme, we outline a framework for analysis that moves beyond the narrow confines of the dominant political tournament paradigm. We hope that this preliminary framework will contribute to building a theory of interjurisdictional environmental relations appropriate to the complexity of this critically important topic.

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