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Local environmental governance and policy implementation: Variegated environmental education in three districts in Tianjin, China

Abstract

Variation in the implementation of environmental policies in urban China has received widespread scholarly attention, but the extensive heterogeneity in local governance frameworks has remained understudied. Leaning on the new institutional theory, this article suggests that the concept of institutional configuration can bring structure to the analysis of local complex governance frameworks and help identify factors that create different approaches to environmental policies. This study analyses the construction of approaches to new environmental education policies in three urban districts in Tianjin to illustrate how the suggested conceptual framework applies to centrally-administered Chinese cities. The findings show that different combinations of formal and socio-cultural factors emerge as decisive in the institutional configuration of each district. This study also reveals new interesting nuances in the motivations behind environmental policy implementation.

Keywords: governance, district, environmental policies, environmental education, China

Introduction

Since the mid-1980s, when environmental protection made its foray into mainstream Chinese politics, environmental governance has become a significant aspect of city administration. As China's environmental problems reach critical levels, the number of environmental programmes has multiplied, along with studies on challenges in urban environmental governance. This study aims to complement the extant literature in three ways.

First, the vertical incentive-system and local socio-economic conditions have been identified as important factors that steer environmental policy implementation in Chinese cities. Recent research has brought up local institutional frameworks as critical objects that require more scrutiny (e.g., Chang and Sheppard, 2013; Kostka and Nahm, 2017; Shin, 2017), but studies have

not yet approached in a structured manner the “framework” and how divergent contexts create different approaches in districts. This study attempts to address this complexity in a more structured way by using concepts from the new institutional theory (Peters, 2012; Stephan et al, 2015). Attention to various aspects of local institutional configurations allows emphasis on the heterogeneity of contexts, norms and actors in the process of policy implementation. This approach enables an integration of multiple factors and thus transcends the debates that focus on a limited number of factors. This is important since, depending on the local context, different factors emerge as decisive.

Second, recent studies have analysed the transformation of environmental policies during their process of implementation (see for example de Jong et al, 2016; Kostka, 2014; Li et al, 2011; Xu, 2017); however, these analyses have focused on the administrative level of municipality, leaving variation at lower administrative levels unexplored. In contrast, this study analyses the implementation of environmental policies in several districts of one city to reveal divergent environmental governance dynamics at the sub-municipal level. The sub-municipal units in Chinese cities deserve research attention for several reasons. First, sub-municipal governments have become important actors in policy implementation owing to the decentralisation of decision-making powers. City governments issue policy plans, but their implementation is handled to a large extent by districts and counties (see e.g., de Jong et al 2013, 109). In particular, districts in the cities of the highest administrative level, so called centrally administered cities, have considerable powers. Tianjin is one of these cities, the others being Beijing, Chongqing and Shanghai. Second, the districts and counties of these centrally administered cities have emerged as particularly powerful actors. The decision-making powers of administrative units in China depend on their rank, and in this system, districts of these cities are in the same rank as provincial capitals. (Ma, 2005, 478-9). They oversee extensive areas with large-scale populations and have immense economic capacity to promote development projects. For example, in 2015, Tianjin’s Dongli district reported a population of 753,700 with an area of 480 km² and a GDP of CNY88 billion (€12 billion) (Tianjin Bureau of Statistics, 2016), making it comparable to a middle-sized European city. Third, implementation of municipal policies varies significantly at the district and county levels. Several recent studies on urban China have identified inter-district differences (Ahlers et al, 2016; Author, 2013; Hsing, 2010; Zhang, 2005), but fewer studies have focused on environmental policies (author 2018; on county-level cities within the Suzhou municipality: Li et al, 2011). Thus, to obtain a comprehensive overview of policy implementation in Chinese megacities, it is important to look beyond the city level and explore their sub-municipal areas.

Third, as Xu and Chung (2014) indicate, while China’s environmental practices have been a popular research topic, the social construction of ‘environment’ and environmental policies is yet to be adequately studied. Conceptual models and norms should be central themes in a study of governance as they profoundly steer policy-making (Campbell, 2002). Therefore, this study particularly focuses on how variation is created at the district level in the construction of ‘environmental friendliness’ (huanjing youhaoxing), which has been a core concept in environment-related policy documents. Environmental education is a suitable case for such a

study, because it aims to explain and convey the essence of an environmentally friendly lifestyle to people.

This study analyses the construction of approaches to new environmental education policies in three urban districts in Tianjin to illustrate how the suggested conceptual framework applies to centrally-administered Chinese cities. The study asks how the different aspects of the local institutional configurations affect the construction of policy approach in articulation with central-local administrative incentives and local socio-economic conditions.

I first develop a research framework based on earlier studies and concepts from the new institutional theory. I then describe the methodology and briefly introduce Tianjin's framework of environmental policy implementation and how it opens possibilities for flexible approaches. In the fifth section, I detail how the institutional configurations of each district affected the construction of local approaches to new environmental education policies. In the conclusions, I discuss the main findings with their theoretical and methodological implications.

Variation in environmental governance in Chinese cities: How to approach "the local framework"

Environmental policies are cross-sectoral by nature. China's new Ministry of Ecology and Environment (previously the Ministry of Environmental Protection, MEP) has different departments, for example, for pollution control, water management, and environmental information dissemination and education. Depending on the issue at hand, these departments need to coordinate policy planning and implementation with divisions of other sectoral ministries. For example, environmental information dissemination and education require coordination among several sectors because the local-level bureaus of environmental protection are responsible for arranging environmental education not only in educational institutions but also in companies, media outlets, and administrative agencies. Because environmental education is fundamentally a mandate of the Department of Environmental Protection, it can be regarded as an integral part of a city's environmental policies. Earlier research has provided evidence for divergence in environmental governance not only across cities but also between different environmental policy areas and between different administrative units that implement environmental policies (Kostka and Nahm, 2017). Hence, findings of a study of environmental education are not necessarily generalisable to environmental policy implementation in other fields. However, for an analysis of environmental policy implementation, environmental education provides an intriguing case, because unlike most other environmental policies – e.g. pollution control – it has no negative impact on GDP growth. It doesn't impose restrictions on production, nor does it necessarily cause extra costs. Are local officials more enthusiastic to implement such environmental policies that don't conflict with economic goals?

In China, experimentation is a typical approach to new policy issues and decentralization of decision-making powers has enabled localities to implement state-issued policies with great flexibility. While variation in the outcomes of environmental policies is regarded as evident, the

ultimate policy outputs should be congruent. For example, in the case of environmental education, the policy output should be change in behavior towards environmentally friendly lifestyles. Earlier research has indicated that Chinese cities find motivation to implement environmental policies when they help to attain state-defined key goals, so called "hard-targets". Also city governments define local policy goals to steer the performance of cadres and departments. Budget allocations, and leaders' careers and bonuses have depended on the attainment of these goals, hence the administrative incentives to reach them have been strong.(Brettell, 2013) Since the 1980s, two hard-targets that pertain to environmental policies have been GDP growth and the maintenance of social stability. The GDP-growth target has been pursued at the cost of the environment, and cities have tended to foster good environmental outcomes mainly when environmental and economic goals overlap (Nahm, 2017). Environmental concerns of the emerging pollution-adverse middle class have also forced local leaders to pay attention to the environment to maintain social stability (Van Rooij et al, 2017).

Several studies have highlighted the difficulties in setting appropriate targets and defining effective incentives as a fundamental weakness in China's vertical central-local incentive system with often seen results of non-performance, under-performance or unintended negative consequences at the local level (Chang et al., 2016; Kostka, 2013, 2014; Ran, 2013). The recent re-centralisation efforts (Wu, 2016) have forced localities to change their behaviour, but stricter environmental policy enforcement has not been effective in diminishing variation because of poor policy-planning, strong local interests and weak capacities in many cities (Kostka and Nahm, 2017; Van Rooij et al, 2017).

Economic calculations can also influence environmental policy implementation in positive ways. Some cities pursue a strong environmental reputation as a part of their city-branding strategies. A strong green brand helps to attract more investments, tourists and new middle-class residents and hence to promote economic growth (Lu et al, 2017). Furthermore, "green" public and private funding is available for projects that have an environmental label. (see e.g. Ran 2013, 29)

In addition to administrative and economic incentives, also socio-economic conditions of the city have been found to influence environmental policy implementation. Cities in the wealthier parts of the country seem to be more inclined to pursue stricter environmental policies and host a more comprehensive green agenda (Van Rooij et al, 2017).

However, environmental policy implementation depends ultimately on a much more complex combination of diverse factors. Recent studies refer to a complex array of local features that influence the mechanisms of implementation. Kostka and Nahm have observed that in China, 'local governments remain a heterogenous group, as motivations, capacities, and constraints continue to differ significantly across and within local governments, as well as across policy arenas' (2017, 570). Shin underlines that identifying local governance networks of various actors on several levels is imperative, 'because they raise serious questions about some conventional explanations for the drivers of regulatory outcomes in local China', in particular the centre-local axis and local agents' maximisation of incentives (2017, 629). Chang and Sheppard (2013) in turn

emphasise how green entrepreneurial policies are constructed locally in local institutions, networks, and established practices. Similar factors have been observed in policy implementation, even at the sub-municipal level (Ahlers et al., 2016; Author, 2013, 2018; Hsing, 2010; Zhang, 2005), which justifies use of same analytical framework at both municipal and sub-municipal level.

Summing up, several recent studies underline the complexity of local context, but they don't take a step further to provide tools for its analysis. The abovementioned studies along with other studies (Li and Higgins, 2011; Chien, 2013) can be perceived as pointing to various aspects of formal institutions (regulations, leaders, networks, capacities, and constraints) and socio-cultural institutions (established practices, norms, values, and concepts) as key features of local governance frameworks. These aspects find strong resonance in the concept of institutional configuration which comes from the new institutional theory. The concept leans on the sociological strand of the new institutional theory, which helps to identify how institutional environment may affect the approaches that leaders choose. (Hall and Taylor, 1996, 951)

Institutional configuration can be understood as a sum of both regulatory and socio-cultural aspects of institutions that constrain and shape decision-making and implementation (Gu, 2000, 199). It recognises that governance behaviour is not only steered by formal organisations and regulations but also by informal normative and cognitive institutions, i.e., socially constructed, deep-rooted social structures that provide models for action. The socio-cultural institutions find expression in motivations, capacities, established practices and trajectories, and they define the valued goals and appropriate means to reach them (Scott 1995; Stephan et al 2015). The local institutional configuration has a different composition and dynamics in each locality and even in each policy field. Within the limits of available resources, the institutional configurations limit, broaden and condition the space available for action. In each locality, the centrally defined policies and incentives articulate with local institutional configurations and socio-economic conditions in diverse ways, leading to wide variations in how policy goals and approaches are actually defined at the local level.

Following Hysing and Olsson (2018, 37-38), local leaders are regarded here as goal-oriented actors who make their decisions with 'bounded rationality' within local institutional configurations. They take rational action in locally acceptable ways (see also Hall and Taylor, 1996, 949). The local institutional configuration conditions how the local decision-makers aim to answer the two following questions when they are asked to implement a new policy: *Why* should we implement this policy and *how* should we implement it? The answers to these two questions form the local approach to the given policy.

Methodology

The empirical aim of this study is to determine 1) what motivated the local leaders in three urban districts to implement new policies on environmental education, which the Tianjin municipal government issued for the 12th Five-Year Plan (2011-2015), and 2) how the local institutional configurations in interaction with local socio-economic conditions affected their implementation.

The various aspects of the formal institutions (regulations, leaders, networks, capacities, and constraints) and socio-cultural institutions (established practices, norms, values, and concepts) of local institutional configurations constitute the main focus of the analysis. The outcome of the implementation, change in behaviour, is outside of the scope of this article.

Environmental education can be said to consist of three types of content which can be used here as tools to assess variation in approaches. Teachers can include one or several of these types of content into their classes: knowledge of ecological and human systems; scientific investigation and evaluation that help to heighten sensitivity to nature; and a sense of responsibility for the environment combined with action. The first two types are important building blocks of environmental education but, to promote an environmentally friendly lifestyle, the third type is crucial. (UNESCO-UNEP, 1994) Environmental education in China has developed within the framework of socialist moral education, and it has focused on the first two types of content. (Lee and Williams, 2009:12) The third was defined as the overall goal of China's environmental education in the early 2000s. The concept of 'ecological civilisation' was adopted then by the Chinese Communist Party (CCP) as an important development objective. In tune with that concept, the Guidelines for Environmental Education that the Ministry of Environmental Protection issued in 2003 mentioned an environmentally friendly lifestyle as a primary outcome of education.

In addition to the construction of the concept of 'environmental friendliness' in the districts and their schools, I have also chosen to focus on the establishment of so-called 'green schools'. To get a 'green school' nomination, schools first apply for nomination as a district-level green school, and then, depending on the level of ambition, pursue fulfilment of the stricter criteria of city-, national-, or even international-level green schools. The number of 'green schools' can be used as an indicator of enthusiasm to implement environmental education policies because it requires long-term effort and institutionalisation of prescribed practices to receive and retain the nomination. (Author 2018)

The analysis of inter-district differences is based on a comparative study of three urban districts, two of which are inner city districts (Heping and Hedong), and one of which is an outer city district (Dongli). These three districts were expected to provide valuable insights into variation in governance dynamics because of their different socio-economic contexts. As mentioned earlier, richer areas with a middle-class population tend to pay most attention to environmental issues. Heping is a wealthy central district, Hedong a poor urban post-industrial district, and Dongli is a relatively rural new rich district.

The primary research material contains the following official documents various official city- and district-level documents that concern local plans for environmental and ecological development. Primary data was also collected through semi-structured interviews during which staff members of city- and district-level departments of environmental protection and education, one district-level Reform and Development Commission, and several school principals were interviewed. Between two and seven persons participated in these focus group interviews. The interviews were

undertaken in 2014 and 2015. These primary sources are complemented with information gathered from various city- and district-level annual yearbooks, news articles, and interviews with two environmental NGOs in Tianjin in 2015.

Framework of environmental governance in Tianjin

Conceptual framework: variation between ecological civilisation and techno-optimism

The overall conceptual framework for China's environmental governance is based on the creation of an ecological civilisation. This goal was defined as a key development objective in 2013 during the 18th Party Congress. The "Beautiful China" project became the practical version of this new policy, and this strategy emphasised environmental education to promote ecological values as well as environmentally friendly consumption patterns and lifestyle (Zhang, 2013).

In addition, ministries issued their own environmental programmes within their spheres of jurisdiction. The programmes of the Ministry of Housing and Urban-Rural Development (MoHURD) and the Ministry of Environmental Protection (MEP) emphasised the role of science and technology in improving living environment, ignoring lifestyles, consumption patterns and environmental education. Nevertheless, the MEP compiled separate guidelines for an eco-civilisation pilot project, which included the dissemination of environmental information, and promoting green living habits (MEP, 2013).

The Ministry of Science and Technology (MoST) initiated the Programme for Sustainable Development Pilot Cities in 1986, which accounted for education in its plans. However, it considered education in sustainable development in the context of science, morals and culture, not green consumption or living habits (MOST, 2001). In addition to the aforementioned ministries, in 2010 the powerful National Development and Reform Commission (NDRC) initiated a pilot programme for low-carbon provinces and cities that were asked to formulate specific low-carbon development plans, including encouraging green lifestyles (NDRC, 2010). As is evident from these eco-pilot projects, the ministries emphasised the protection and improvement of the natural environment and the ecological construction of new urban structures with the help of science and technology. Only the eco-civilisation projects initiated by the MEP and the NCRD have highlighted the need for education in an environmentally friendly lifestyle.

The summary highlights the diversity, if not the haphazardness, of the concepts in China's environmental governance. More specifically, localities can choose an approach that best suits their conditions and priorities, ranging from faith in society to establishing an ecological civilisation to belief in science and technology as a sufficient tool for sustainable development.

Inclusion of environmental issues in Tianjin's policy agenda

In terms of urban population, Tianjin is China's fourth largest city. The city is located on the coast, southeast of Beijing. Since 2006, Tianjin and its Binhai New Development Area have experienced state-supported development drives, which are similar to those conducted in Guangzhou in the 1980s and in Shanghai in the 1990s. In 2006, Tianjin was approved for the MEP's programme "model cities of environmental protection" and in 2011 it was nominated as a low-carbon pilot city by the NDRC. In addition, several of its districts and counties have received approval from various state-initiated programmes. The Sino-Singapore Eco-City in Binhai district is a specific case. The Eco-City is based on an agreement between the premiers of China and Singapore and it has own sets of key performance indicators. At the same time, it is a MoHURD low-carbon pilot. However, the impact of the Eco-City on the environmental governance practices of Tianjin's ordinary urban districts appears to be limited.

In an attempt to improve its performance in environmental issues, in 2011 Tianjin issued several FYPs that addressed climate change, environmental protection, ecological city construction, sustainable development, and environmental education, making the policy and incentive framework more complex. Among these local plans, the master plan for the construction of an ecological city issued in 2007 acted as an overall local strategy for Tianjin's environmental governance until 2015 (Discussion with an expert in Tianjin, 2015). In terms of environmental education and awareness-building, the plan adopted goals similar to that of the CCP programme for ecological civilisation: to nurture an environmentally friendly lifestyle.

Environmental education targets in Tianjin

Tianjin issued an Outline for Environmental Communication and Education Work for the 12th FYP in 2011, which was a localised version of a corresponding national level FYP. The document frankly admitted that Tianjin was far behind other major cities (Tianjin EPB, 2011). For that reason, there was clear determination during the 12th FYP to improve performance. To remedy its bad reputation in the field, Tianjin issued an FYP for environmental education and communication and binding Regulations for Environmental Education (Tianjin People's Congress, 2012).

The Five-Year Plan covered not only schools and kindergartens but also companies, media outlets, villages, residential communities, and administrative agencies. With regard to schools, the regulations included mandatory quantitative targets, and they defined several general qualitative targets. The FYP stipulated that, by the end of 2015, half of the primary and middle schools in the city would qualify for green-school certificates, of which half would be city-level certificates with stricter criteria. In the city-level evaluation of green schools, a large proportion of the required points (90 out of 100) could be collected by building infrastructure, improving the greenness of the campus, and providing knowledge. Only a few of the key performance indicators such as waste-management and saving of resources, related directly to the fostering of a green lifestyle. (Jinnan District, 2014). These criteria, with their emphasis on environmental knowledge and the physical environment, reflected the instilled old approach to environmental education. To what extent

were the goals of ecological civilisation embedded into the districts' approaches to the new policies?

Construction of divergent approaches in districts

The three districts of Dongli, Hedong and Heping vary considerably in area, urbanisation rate, population size, economic structure and allocation of financial resources for education (Table 1). As mentioned earlier, richer areas with a large middle-class population are more prone to promote environmental issues than the poorer ones. However, in Tianjin, the 'blue-collar district' of Hedong had the highest percentage of city-level green school nominations among Tianjin's districts, the wealthy Heping languishing only in third place. The percentage of green schools in the newly rich Dongli was a mere 31.7%, making it the second poorest performer among urban districts. The general features of the districts are not sufficient to explain this intriguing situation. The following sub-sections present more in-depth examinations of the districts. The sub-sections are written as narratives to highlight the local dynamics in the construction of approaches to the new environmental education policies: what motivated local leaders to implement the new policies and which aspects of the local institutional configurations emerged as influential, in interaction with local socio-economic conditions.

Table 1. Basic indicators of the three selected districts (2014)

Heping District

As the traditional central district of Tianjin, Heping has been proud of being at the forefront in Tianjin in many policy areas. In its official documents from various periods, the district government has stressed its aspiration to lead in environmental issues in Tianjin, including the promotion of environmental education (Heping District n.d. ca. 2007; Heping District 2013). This highlights the efforts of Heping to profile as a "green" district, and it also indicates the linkage between environmental education and general environmental policy of a jurisdiction.

When the new policies were issued in 2011, there were already two national-level green schools and 17 city-level green schools in the district, out of a total of 49 primary and middle schools (Heping District 2011, Tianjin Education Commission, 2012). In 2015, all of Heping's primary and middle schools had a green label or were in the process of applying for it (Interview at Heping EB, 2015).

During the 12th FYP, Heping district continued its ambitious work and established comprehensive environmental education according to the concept of ecological civilisation across all its schools. This achievement was a result of good resources and traditions, as well as motivated leaders: the district leaders strove to maintain their lead in environmental issues in Tianjin, including education. For example, the district's environmental protection plan of 2013 specifically mentioned that, by

actively arranging environmental education in schools and residential communities, Heping would be able to keep its lead in Tianjin in promoting environmental education (Heping District, 2013).

As usual in China, environmental education was part of both moral and science education in Heping district. Environmental protection as a lifestyle and individual responsibility formed the core of the teaching activities in Heping's schools. This is evident in the education activity 'one plus six', which was initiated in one of the district's schools and later promoted across the entire district. In this activity, 'one' refers to one child who can pass on knowledge about green habits to six adults, including parents and grandparents (Interview at Heping Education Bureau (EB), 2015).

In line with the Regulations for Environmental Education, it can be assumed that Heping provided at least necessary, if not generous, financial and material support to schools. In 2014, Heping's own plan for environmental education explicitly stated, with a hint of self-praise, that due to their excellent resources, many different departments would be promoting environmental education. The same document also stated that the district would provide free environmental education materials to primary schools and kindergartens (Heping District, 2014). The schools had cooperated earlier with NGOs to receive materials and inspiration, but their role had diminished with improvements in the overall infrastructure for environmental education (Interview at Heping EB, 2015).

Hence, in Heping, the main motivation for pursuing comprehensive environmental education was administrative: the district government wanted to demonstrate a leading position among the urban districts. As mentioned earlier in this article, within the performance assessment system, excellent performance can generate both administrative scores and economic benefits. It can reinforce bargaining positions in budget negotiations, and improve prospects for leaders' promotion. Due to Tianjin's determination to improve its performance in environmental education, good achievement in that field presumably gained importance in the assessment system. It can be assumed that these incentives motivated leaders in Heping to pursue for excellence. Excellent performance in environmental education also helped to strengthen brand as an environmentally aware district and consequently contribute to the district's competitiveness in the eyes of potential new residents and businesses. Hence, it could be argued, that environmental education helped the district to reach that type of economic goals as well, although only slightly, and in an indirect way.

Heping's approach to the new environmental education policies was based on various aspects of the local socio-cultural factors: the long trajectories of environmental education building and values that respected environmental awareness building. These values were coded into local regulations. Hence, the formal institutions relevant to environmental education were imbued with green values. Thanks to good socio-economic conditions, and supportive traditions, the formal institutions had grown so strong that cooperation networks with external partners were no longer regarded as necessary. Consequently, the framework of environmental education was rather consistent in the districts' schools.

Hedong District

Hedong is known as a “workers’ district” due to its industrial past. Education levels among its population are lower than among their counterparts in Heping. Nevertheless, while it is less wealthy than most other inner urban districts, it puts a considerable emphasis on education. For example, it has sought to be the best in the city in carrying out the modernisation of compulsory education (Hedong District 2011). The high priority it gives to education can also be seen from the share of budgetary expenditures it assigns to that sector, which is as large as in Heping. However, the actual sums it can allocate to education are much lower (see Table 1).

In the mid-2000s, during Tianjin’s efforts to become a model city for environmental protection, Hedong issued a long-term eco-district plan for 2006–2015. Its key objective was to create a coherent system for ecological environment, production, living environment and culture as well as to save natural resources (Hedong District, 2008). Hedong district had thus also chosen to pay attention to cultivating an environmentally friendly society since before 2011. The development of green schools was an integral part of the eco-district plan (Hedong District SCPC, 2010).

By the end of the year 2011, during which Tianjin tightened its requirements for environmental education, Hedong already had – out of 41 primary and middle schools – one international, three national, and 18 city-level green schools. It had thus already reached the general quantitative goal (25%) and didn’t need to improve its performance (Hedong District, 2012). However, by 2015, the number of national- and city-level green schools in Hedong had risen to 30, which indicates a supportive atmosphere towards the establishment of 'green schools' in Hedong (Tianjin Daily 2016).

One clear reason for the strong motivation in Hedong was the district leaders' decision to utilise a sturdy administrative instrument to foster environmental education. According to the district's 2014 plan for environmental education, specific targets for environmental education and communication would be included in the responsibility system for civil servants (Hedong District, 2014). The head of the district’s educational bureau described the use of administrative incentives as specific to Hedong, in the context of Tianjin. Moreover, in addition to using the responsibility system, the district urged schools to strive for green school nominations by including them in the schools’ assessment system. A higher-level nomination gave better scores. (Interview Hedong EB 2015)

The Hedong Education Bureau allowed schools to flexibly develop their education methods but proposed two uniting themes for environmental education. The first was moral education. Second, the Hedong Education Bureau wanted schools to encourage pupils to observe their own environment and find science-based solutions to everyday problems (Interview at Hedong Education Bureau, 2015). Hence, responsible action was encouraged, not in the form of sustainable lifestyles, but in the form of scientific action for the protection of the environment.

The emphasis on environmental education in Hedong can be attributed to the head of the district's Education Bureau, who previously worked as the headmaster at 'green' Middle School Number 102. Because of his committed work, he was promoted to the position of department head. Discussions with the school's representatives and the head of the school district highlighted the importance of cooperation with institutions of higher learning, companies and other actors. For example, to support scientific investigations into environmental problems, Middle School 102 had received a CNY200,000 donation from the Municipal Committee for Science and Technology and financial support from Nankai and Tianjin Medical universities. The school had also collaborated with the British Embassy and NGOs such as Friends of Green. Other schools had received support for environmental education from Shell, Volkswagen, Samsung and Amway (Interview at Hedong EB, 2015), not all of which are always associated with caring for the environment. The projects had different foci such as energy and water conservation, recycling, or greening of the school campus.

It appears that, in addition to genuine interest in promoting environmental education, 'environment' was a magic word that created opportunities for external funding. Unlike the more affluent outer urban districts, headmasters in poorer, inner urban districts had to invest a large share of their time in attracting external funding (Interview at Dongli EB, 2015), and promoting environmental education was one way to do so. This seems to be a plausible explanation because Hongqiao district, one of Tianjin's other blue-collar inner districts, also had a high percentage of green schools (Tianjin EPB, 2014b). Environmental education was thus also a means to derive more funding to improve the performance and brand of the schools. However, the varying objectives of the external funding schemes steered the development of environmental education in different directions: science, knowledge provision, green areas, conservation of resources or recycling. In addition to the increasing resource disparity, access to external funding contributed to the irregularity in the content of education.

Similar to Heping, the leaders in the education sector in Hedong were motivated to promote environmental education to foster administrative and economic gains, but with a different logic. Because of financial constraints, the leaders in Heping Education Bureau assessed the value and utility of environmental education differently. The Bureau was able to improve its resources and negotiating positions through environmental education. For schools in this less wealthy district, few, if any, financial resources needed to be expended in order to qualify as green through the promotion of environmental moral education. The green label increased the probability of schools cooperating with new partners and attracting external funding and other resources. Increase in the number of green schools and improved educational resources were issues that counted in the performance assessment of the education department. This in turn enhanced the department's status and bargaining positions vis-à-vis the city government, giving them greater muscle in negotiations for resources and increasing their leaders' chances for a promotion. The promotion of green schools set an auspicious economic circle into motion.

Constrained socio-economic conditions and the districts' traditional emphasis on education steered Hedong's approach towards capacity building of schools. Several aspects of the local institutional configuration further differentiated Hedong from Heping. An innovative and entrepreneurial department head was a primary factor that defined the local approach. The department head identified an opportunity in the trendiness of environmental protection and encouraged schools to cooperate with external partners to collect additional resources. In addition, wide networks of non-governmental partners and strong administrative incentives also framed Hedong's approach.

Dongli District

Similar to many other outer urban districts, Dongli is in the process of transforming its rural villages into modern towns and restructuring its economy from the primary sector to the manufacturing, processing and services sector. The large areas available in the outer urban districts offer better opportunities than the inner-city districts to engage in land speculation and generate huge profits. Also typical for outer urban districts, a large portion of Dongli's population consisted of peasants and rural-to-urban migrant workers (Table 1). While Heping and Hedong were thoroughly urban, Dongli had in all 57 rural villages in 2013 (Tianjin People's Government, 2014).

Dongli's development strategies are tied to the Binhai New Development Area: the district acts as a bridge between Binhai and the city centre and supports the development of Binhai. During the development of these strategies in the early 2000s, Dongli also applied to the sustainable development programme of the Ministry of Science and Technology to acquire support for its challenging transformation. In 2009, Dongli was officially nominated as a sustainable development pilot district. The plan for this pilot reflected the fundamental notion that sustainable development rests on economic, environmental and socio-cultural pillars. It also acknowledged that while principally understanding the comprehensive values of sustainable development was easy, putting them into practice was difficult. Despite this, the plan did not account for awareness-building as a method of inducing behavioural changes. Scientific thinking and the application of new technologies were expected to lead the way to sustainable development (Dongli STC, 2008), so the role of the MoST, which authored the plan, was strongly visible.

When Tianjin issued stricter regulations for environmental education in 2011, Dongli had 13 city-level green primary and middle schools, and by 2014, the number had risen to 19 out of 60 (Table 1; Tianjin EPB, 2012, 2014a). The motivation to increase the number of green schools and to promote environmental education in the district came from above. In the interview at the Educational Bureau (2015), policy guidelines issued by higher-level units were given as the main reasons for the strengthening of environmental education.

Like in Heping and Hedong, the interviewees in Dongli district emphasised the role of moral education in providing an important framework for environmental education. In addition, the care for the built natural environment rather than a resource-conserving lifestyle was evident in the

approach to environmental education. A good example is Huaming Middle School, a national-level model school for the construction of ecological civilisation. With its excellent financial resources, the school was able to develop small gardens in which students could sow seeds and grow plants. Dongli's localised version of the "Beautiful China" programme was incorporated in the environmental education plans of the district's schools, and it too focused on a green and tidy environment. Part of their environmental education was to make school campuses greener, more beautiful and cleaner. Similarly, companies that partnered with schools in Dongli mainly funded the greening of school yards. The education sector did not consider NGOs strong partners in environmental education because of their perceived specialised areas of interests such as animal protection (Interview at Dongli EB, 2015).

Leaning on the traditional Chinese approach to environmental awareness building, moral education, Dongli's approach for environmental education was built on its techno-ecological understanding of an environmentally friendly lifestyle. It regarded new modern school infrastructure and well-maintained green spaces as adequate conditions to promote a green lifestyle, with less emphasis on actions for a sustainable lifestyle.

In Dongli, the main motivation to implement new environmental education policies was administrative. The local leaders implemented the new policies to fulfil the basic expectations of the municipal authorities. The wealthy district did not need to develop additional strategies to collect more resources, as Hedong did. Nor did they find environmental education a useful or necessary tool to demonstrate performance or to reinforce the district's brand, as in Heping.

Dongli did not fit into the usual pattern of 'strong environmental agenda in a rich jurisdiction', revealing interesting features of the local governance dynamics. The societal conditions and the choice of partner (the MoST) seemed to strongly shape the normative and cognitive aspects of Dongli's institutional configuration. In China, knowledge about environmental protection is considerably lower among the rural population compared to the urban population (Yu, 2014), and environmental education tends to be weaker in rural areas (McBeath et al., 2015, 153). Environmental education didn't seem to find strong support in the values and norms of this relatively rural district. Dongli lacked a strong tradition of environmental education. The selection of partner also conditioned the district's approach. Under the influence of the MoST, Dongli placed emphasis on eco-technological solutions and the visual qualities of the natural environment.

Conclusion

The empirical cases show how the variations in policy approaches arise in the complex articulation between local institutional configurations and socio-economic conditions. Analytical attention to the various aspects of institutional configurations proved a useful tool to address the complexity and to offer a structured way to recognise the multiple factors that affected the process. The socio-economic conditions in the interaction with local norms and values seemed to strongly steer the construction of local incentive systems in all three cases. The characteristics of the leaders and the funding partners played a major role in some but not all cases. However, based on only these

three districts, it is not possible to identify a general mechanism behind the interaction between local institutional configurations and socio-economic conditions.

This study revealed new interesting nuances in the motivations behind environmental policy implementation in Chinese cities. The environmental policy incentive system under scrutiny managed to produce quantitatively satisfactory outcomes owing to neutral or positive administrative and economic returns. As the implementation of environmental education policies did not necessarily incur extra costs, its enforcement did not meet resistance for financial reasons. In Heping and Hedong, environmental education policies were enforced in three realms with positive returns in mind: within the administrative system, in partnerships with non-governmental institutions that provided external funding, and through brand-building in the society. Environmental education was not only regarded as an administrative obligation, but in the case of Heping and Hedong, it became a means to help reach other important goals. In Dongli, the policies were implemented merely to fulfil the basic expectations of the municipal authorities.

The results also show that less wealthy jurisdictions with a strong government capacity, such as Hedong, can develop ambitious environmental policies. It also became evident that good quantitative performance does not guarantee excellent qualitative results: all three districts exceeded the expected percentage of green schools, but only Heping was able to arrange coherent education for an environmentally friendly lifestyle throughout the district.

As this study shows, the city-level framework of environmental policies can only be considered indicative when districts have significant decision-making powers. A few ambitious districts within a city achieving excellent performance levels can improve the city's overall performance rates and create a positive impression, even if most districts are poor or average performers. Furthermore, even if a city's environmental policy framework emphasises ecological values, one cannot determine the commitment of the districts, which often implement the policies, to those values. Thus, any analysis of a city's environmental governance should consider the variation among the districts and counties to ensure that the research results are not biased.

To further promote the study of urban environmental governance, a more nuanced understanding of local institutional configurations is needed among different fields of environmental governance and various types of urban administrative units.

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