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Chapter Title:

China’s Political System, Economic Reform and the Governance of Water Quality in the Pearl River Basin

Summary

China’s economic reform and opening up process initiated in 1978 has supported a more decentralized style of governing public affairs, including water resources management. With the aim of promoting economic growth, provincial and municipal authorities were given enhanced economic and administrative powers. This has encouraged greater competition amongst jurisdictions to attract investment. Some of the pitfalls of such fragmentation have been exposed by the difficulties in cross-boundary work to control water pollution, monitor water quality and safeguard drinking water security. This is illustrated through analysis of the case of the Pearl River Basin. The institutional structures in place display features that seem to have negative consequences for the capacity of the governance regime to adjust and address evolving social and environmental challenges.

Introduction

This chapter explores key aspects of China’s political system and political economy and their influence on the management of river basin systems, particularly their water quality. The chapter addresses the period since the beginning of economic reform in 1978 and is composed of two main sections. The first briefly characterizes the process of economic decentralization in the People’s Republic of China (PRC) and its implications for inter-governmental relations (both centre-province relations and inter-provincial relations) in the sphere of water quality governance. It is argued that three decades of economic reform under authoritarianism have established dichotomies of change and stability that continue to underpin the study of institutions in China.

Secondly, the concrete case of the Pearl River Basin is analysed on the ability of the current water governance system to respond to threats to the river’s ecological systems and to the population’s drinking water security. Ultimately, this account will attempt to respond to questions on how a form of “behavioural federalism”, and fragmentation in the country’s administrative system, is currently influencing the capacity for environmental governance in China, particularly the governance of water quality.

The chapter concludes by considering the capacity of China’s water quality governance system to adapt itself in order to address problems emerging at catchment scale more effectively. In this context, this chapter makes use of the concept of adaptive capacity, defined as the ability of a system to adapt to anticipated or experienced change through processes of experimentation, monitoring and learning (Folke et al. 2005).
Key features of China's political and economic system in transition

Chien (2010) characterises the central-local relation of power in China as one of “asymmetric decentralization”, in which substantial economic decentralization has taken place in the absence of meaningful political decentralization.

The success of China’s economic reform has been largely attributed to the agency and power gradually handed over to regional and local levels of government (i.e. provincial and municipal) since the approval of the "open door" policy by the Communist Party in 1978 (Howell 2006). Throughout the 1980s important administrative and fiscal responsibilities were devolved to regional and local governments, which gradually took over decisions regarding trade, foreign investment, land use, budgetary and extra-budgetary revenues and expenditures (Chien 2010).

A key aspect of the power of local governments relates to land use management responsibilities. Land use rights became saleable items after the 1988 Constitutional amendment, after which land use rights “assignment” was added to the prerogatives of local authorities (Yeh and Wu 1999). The product of land use rights sales has been treated as extra-budgetary revenue and as such is not shared with central authorities. As an illustration of the importance of extra-budgetary revenue, Xiamen (overlooking the Taiwan Straits in Fujian province) reported that the income from land lease fees in 2006 was close to 15 billion Yuan, which was higher than the entire budgetary revenue for that year (Chien 2010). New opportunities for enrichment and career development represented robust incentives for local government cadres and decision-makers to use these newly acquired powers to advance both economic growth as measured by Gross Domestic Product (GDP) and personal ambitions (Oi 1995 and Wu 2000). Environmental protection is often considered an obstacle to GDP growth (Ma 1997), which results in low authority being assigned to environmental protection institutions (Jahiel 1998).

In parallel with economic decentralization, political centralization has remained firmly in place, with the Communist Party retaining the monopoly of power with complete control of administration, legislation, judiciary and media, implementing the principle of “the party overrides the law” (党大于法) (Guo 2000).

A key manifestation of political centralisation is also the cadre management system of the communist party known as “nomenklatura”, according to which upper level governments have authority over appointments at subordinate levels (Tsui and Wang 2004). In 1988, the party’s central organs issued guidelines establishing a new annual evaluation system targeting party secretaries and government executives at the county and township level, as an attempt to regain control of local officials’ actions (Huang 1996). A “target responsibility system” was put in place, with targets related to economic growth, such as the amount of GDP growth or Foreign Direct Investment, representing the most decisive factor. The implementation of this system is based on the signing of annual contracts or terms of responsibility specifying concrete targets subject to some negotiation. The extent to which objectives are met determines progress in career as well as the existence of tangible and intangible rewards and sanctions.
On average, direct economic consequences may mean as much as the addition or subtraction of two months’ salary (Chien 2010).

Positive and negative effects of Chien's (2010) asymmetry have been noted at different scales, namely national, regional and local, as shown in the table 1.

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<th>Table 1 - Effects of asymmetric decentralization at different scales</th>
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<td><strong>Positive effects</strong></td>
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<td><strong>National scale</strong></td>
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<td><strong>Regional scale</strong></td>
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<td><strong>Local scale</strong></td>
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Source: Prepared by the author based on Chien 2010

It is important to note that this top-down exercise of political power has made horizontal interplay between administrative sectors a difficult challenge as functional jurisdictions are defended in almost territorial terms. The implementation of environmental policy and enforcement of law is further complicated by local government’s considerable autonomy and de facto economic power that, when necessary, acts as an effective counter-weight to central political directives. This relates to the classical competition embedded in China’s bureaucratic matrix, given that vertical lines of authority may be challenged by horizontal lines of authority at lower levels of government where decisions on implementation are taken and the distribution of abundant financial resources takes place (Lieberthal 1995).

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^1 In the 1990s the internal trade as percentage of GDP was only 22 percent comparing to 28 percent in the European Community and 27 percent in the former Soviet Union (Zheng 2006).

^2 New indicators such as energy cost per unit of GDP or agricultural land conservation are being experimentally used (Chien 2010). In the case of Zhouzhuang county in the municipality of Shanghai, traditional waterways and natural landscape were preserved after performance indicators were adjusted in favour of ecological conservation and tourist promotion. In another occasion, local governments took the initiative of experimenting with, for example, programmes of privatisation of State-Owned Enterprises (SOEs) (Chien 2010).
The performance of the Environmental Protection Bureaus (EPBs) seems to suffer from such bureaucratic competition. The EPBs are excessively dependant on their local governments as the annual budget of these departments is decided by the local governments and not by higher levels in the same administrative hierarchy. The high priority given to GDP growth since the late 1970s and engrained in the target responsibility system, along with the high autonomy of local leaders in choosing the means to achieve this objective, is considered one of the main reasons for the continued environmental degradation in the country (Jahiel 1998, Du Qun 2011).

Given contradictions of “socialism with Chinese characteristics”, Howell describes the Chinese state’s pattern of behaviour as “polymorphous”, which is a helpful illustration of how the current political system induces rivalry and unity, efficiency and inefficiency, both across space and time (Howell 2006). This interpretation builds on previous visions of the Chinese political system as a *fragmented authoritarian regime* (Lieberthal 1995).

Several authors have gone as far as suggesting that the Chinese State behaves as a federal political system (Montinola et al. 1995, Zheng 2006, Weingast 2009). The dynamics of central-local relations and the measure of local autonomy provided by economic means and regulatory capacity, seem to provide some backing to such an interpretation. The following section focuses on these specific aspects of China’s political and legislative system, which seem to set the scene for all efforts of national public administration and provision of environmental public goods, such as clean water.

**Behavioural federalism**

Formally, the Chinese state is certainly not a federal one. According to the People’s Republic of China constitution, the country is a unitary state whereby all sub-national governments are subordinate to the central government, and all its administrative organs work under the leadership of the State Council.

The country’s political system lacks several key traits of typical federal systems, namely distribution of powers between central and sub-national governments inscribed in constitutional documents; division of executive, legislative and judicial power at each level of government; division of legislative power between federal state and sub-national governments. There is no clear demarcation between central and provincial governments in regard to the scope and content of their legislative authority. While the Provincial People’s Congresses have the right to pass local laws, the Standing Committee of the National People’s Congress may annul the legislation if any contradiction is found in provincial law (Zheng 2006).

It is important to note, however, that the Chinese state also has no tradition of governing according to the rule of law (Zheng 2006, Li 2007). Li (2007) notes that the general public is normally “suspicious of the law, the courts, and lawyers, and regard authority, money and guanxi （关系 connections） as much more important ways of resolving disputes” (Li 2007, p.148). In regard to central-provincial relations, the enactment of national laws or the passing of central decisions is believed to be the beginning of a bargaining process between the central government and local authorities concerning their implementation (Zheng 2006). Several scholars have also noted that legal fragmentation has become a feature of the Chinese political system (Zou 2006).
In this context, it has been argued that formal institutions are unable to, on their own, account for the significant powers enjoyed by local governments vis-à-vis the Chinese central government, and that a behavioural approach is useful to further our understanding of central-local relations in this case (Zheng 2006).

A behavioural tradition exists in the study of federalism which aims to understand the dynamics of central-local relations; how socio-economic change at the local level impacts on inter-governmental relations; and why the power exercised by local government officials (de facto power) is often greater than the powers constitutionally granted. Economic development at the local level has been found to change the distribution of powers between national and sub-national government in China. The more sub-national jurisdictions develop their local economies, the less financially-dependent on the central government they are. Thus, while the central government witnesses a decrease in the capacity to impose its authority, the local governments gain leverage and influence in strategic choices at national level.

The fiscal dimension of China’s intergovernmental relations seems to provide strong backing to a behavioural interpretation of the country’s political system (Zheng 2006, Weingast 2009). In the 1980s, central revenue declined continuously, with the central government’s share in total expenditure shrinking from 51% in 1979 to 28% in 1993 (Zheng 2006).

A new fiscal arrangement was negotiated and taxation reform was approved in 1994, representing a step forward in the institutionalization of a federal-like relationship between central and local governmental authorities. Before the reform the central government did not have a separate tax collection system as provinces were considered a simple extension of the central government. All taxes were collected by provincial governments and were then divided between the centre and the provinces after bargaining. The 1994 taxation reform formalised a national as well as a local taxation system, with limited revenue sharing and hard budget constraints. Taxes were thus divided into three categories: central, local and a shared category, which is subject to negotiation. In the case of the latter, central government first proceeds to collect taxes and then divides revenue with provinces. Local governments have also been allowed to mobilize extra-budgetary sources through foreign investment, administrative fees and land lease fees, as noted above.

Several authors advance interpretations of the Chinese political system as forms of federalism: market-preserving federalism (Montinola et al 1995), fiscal federalism (Weingast 2009), and behavioural or de facto federalism (Zheng, 2006), given the existence of a pattern of explicit or implicit bargaining between the centre and the provinces.

In respect to the capacity of this system to experiment and adapt, Heilmann (2008) highlights how economic reform and decentralisation have enabled “experimentation under hierarchy” and the successful emergence of an adaptive form of authoritarianism. Yet, this adaptiveness has so far been more favourable to economic growth objectives than to environmental protection.

The strategy for economic reform has had structural consequences for central-local relations and for the exercise of power by local governments. In turn, this has resulted in intricate challenges of collective
action to address environmental degradation, which typically requires coordinated action amongst different administrative sectors and amongst affected jurisdictions. Significant regulatory efforts continue to be made to mitigate serious environmental and social consequences but their implementation and overall effectiveness remain limited.

Local governments consistently try to avoid expensive wastewater treatment investments by searching for alternative sources of supply (water transfer and underground water extraction) and pass on pollution problems to downstream neighbours (Xie et al. 2009). The EPBs located in rural and often upstream areas tend to have less financial means and human resource capacity to face water pollution challenges. This makes the increasing pollution from small towns and non-point sources located in rural areas, and often in upper reaches of densely populated river basins, particularly difficult to address under the current political and economic situation (Xie et al., 2009). Compensation mechanisms, combining market and government support through fiscal transfer, are under consideration. On-going cross-provincial experiments for the protection of drinking water sources at catchment scale include a programme to protect the watershed of Miyun reservoir, which supplies Beijing (Peisert and Sternfeld 2005).

**Water Quality Governance at National Scale**

The institutional structures of water governance (i.e. law, policy and organisational architecture) will be explored in this section, specifically those related to water quality.

China is often credited with having put in place a good set of laws and regulations for water management and environmental protection (Lee 2006). In the legal framework directing water management and governance, one naturally finds provisions with distinct levels of authority: at the highest point in the legislative hierarchy is the constitution, which defines, for example, that the state owns all water and land resources. Relevant national laws are the Water Law, Water Pollution Prevention and Control Law (WPPCL); Water and Soil Conservation Law, Flood Control Law and Fisheries Law, and their implementation guidelines. These are prepared by the ministries concerned and then approved by the State Council and the National People’s Congress. Administrative regulations, such as the Regulation of River Channels and the Regulation of Flood Prevention, may be passed at the national level by ministries for implementation purposes. In addition, local laws may be approved by provincial governments and provincial people’s congresses.

As far as water quality is concerned, two national laws address this subject. The Water Law, first approved in 1988 and revised in 2002, contains important provisions in respect to the protection of water resources. The Water Law and the Water and Soil Conservation Law are explicitly concerned with management of water and soil at catchment scale and their implementation is a responsibility of the MWR.

In its turn, the implementation of the WPPCL, first approved by the National People’s Congress in 1984, with revisions in 1996 and in 2008, is the responsibility of the Ministry of Environmental Protection (MEP). The WPPCL does not specify means for local environmental protection bureaus to finance their work in order to be less constrained by local government priorities.
The 11th Five Year Plan (2006-2010) established the priority of enhancing legal enforcement records, which are consistently identified as a key weakness in the Chinese legal system. In respect of environmental and water laws, MEP and MWR often inspect implementation on the basis of performance evaluations. In 2006 the MEP created Regional Supervision Centres and the 2008 revision of the WPPCL now defines stricter penalties against infringing parties. Du Qun (2011) notes, however, that the new rule for calculating pollution fines is ambiguous (WPPCL, 2008). While it establishes that fines may be up to 30% of the direct loss caused, a definition of direct loss is not provided, making implementation of the new provision difficult. Although larger fines are now possible, polluters can still negotiate and receive fines that are insignificant for their business volume, and offer little incentive to change behaviour.

Thus, although recent institutional changes are important, several authors note that the legal framework has much room for improvement (Xie et al.2009, Du Qun 2011). Two critical problems remain, in particular lack of coordination between relevant water laws and incomplete enforcement of laws and regulations (Song et al. 2010).

As far as institutional arrangements for water management are concerned, the current system is typically referred to as “the nine dragons” (Yan et al. 2006) – a mythical representation of the nine or more ministries involved in the water governance system. Although mismatches amongst policies and amongst plans are inevitable, fragmentation between water quantity and water quality management, and also within the water quality management system, is considered excessively high (Song et al.2010). This phenomenon has both horizontal and vertical manifestations.

In respect of horizontal fragmentation, responsibilities over water quality management are shared between several administrative sectors, with emphasis on two ministerial agencies, namely water resources and environmental protection. Formally, the Ministry of Water Resources (MWR) is responsible for water resources protection while the Ministry of Environmental Protection (MEP) is encharged with water pollution control and prevention. This division of labour is based on the agreement that the MWR responsibilities involve the water bodies themselves, and pollutant carrying capacity calculations; while the MEP controls and prevents pollution from industrial and municipal sources. Also related to water pollution control are the Ministry of Agriculture, which is responsible for non-point agricultural sources while the Ministry of Transportation is responsible for prevention and control of pollutants discharged by ships. The Ministry of Housing and Urban Rural Development (MOHURD), former Ministry of Construction, is responsible for water supply, drainage and water saving (Wang et al.2007).

The National Development and Reform Commission (NDRC) also plays an important role in the process of approving plans and the budgets assigned to their implementation, in accordance with economic transition priorities. These include “river basin water resources comprehensive plans” and specialised plans such as “river basin water resources protection plan” prepared by the MWR and the “water pollution control and prevention plan” prepared by the MEP. Comprehensive plans are longer term plans with no specific planning cycle while specialised plans are approved on a more regular basis according to the five-year national planning cycle.
The costs of maintaining such a fragmented water quality management are considered high, particularly in terms of the monitoring systems. Two different water quality monitoring systems are operated by MWR, in accordance with Art.32 of the Water Law, and by MEP in accordance with Art.25 of the Water Pollution Prevention and Control. Neither laws clearly demarcate MWR and MEP responsibilities in respect of water quality monitoring. No sharing of data has existed and differences of water quality data published have generated controversy. For example, in the case of the Huai River, data from the period from 1995 to 2001 showed an average difference of 11 percent in the water quality data (Song et al. 2010). Although Article 25 of the WPPC, as revised in 2008, currently gives the MEP the authority to set water environment monitoring norms, publish information and organize monitoring network in conjunction with the MWR, the implementation of this provision is unclear and no regular exchange of monitoring data or joint database existed in 2011. This has proved to be detrimental to the institutional capacity to respond to evidence of water quality decline, in the case of both accidents and the slower processes of deterioration caused by human activities.

As far as vertical fragmentation is concerned, water management is still primarily conducted on the basis of administrative boundaries rather than at the basin level. Each jurisdiction seeks to attain its own objectives, having no obligation to consider downstream effects of its actions. River basin-wide objectives related to pollution control have no specific funding, and any investments in this respect need to rely on local budgets. However, given that water pollution discharges often tend to occur in the lower reaches within one jurisdiction, and thus mostly affects jurisdictions downstream, pollution control is not a priority in local governments budgets.

The Water Law establishes an administrative principle that combines river basin-wide management with administrative management based on individual jurisdictions. The Law recognizes the legal status of River Basin Commissions and assigns them some responsibility, particularly in regard to water bodies flowing across provincial boundaries, and establishes that a “plan for a region within a river basin shall be subordinated to the comprehensive river basin plan” (Art.15). Nevertheless, the authority invested in the River Basin Commission is fundamental to its ability to manage and mediate the interests of individual provinces. Article 12 of the Water Law attributes some responsibilities of management and supervision to River Basin Commissions, but the Water Law does not specify responsibilities of River Basin Commissions in relation to local governments and provincial administrative agencies.

In reality, the River Basin Commission’s administrative rank remains lower than that of provincial governments (Figure 2), which enjoy the same rank as central ministries, making the authority of River Basin Commissions insufficient to mediate effectively the different provincial interests. Commissions are effectively regional agencies of the MWR, and not a platform gathering all interested parties in the management and use of the river system (Shen 2010). In respect of water quality management, River Basin Commissions only have the authority to monitor water quality but have no authority in respect of pollution prevention and control work (Xie et al 2009).
It is also important to take into account a new national policy document on “Accelerating the Water Conservancy Reform and Development”, also named Central Document N.1. This has been official state policy since January 2011 following approval by the Central Committee of the Chinese Communist Party and the State Council. The policy establishes three “red lines” symbolizing new controls over water resources development and utilization; new targets for water use efficiency in relation to Gross Domestic Product (GDP) and industrial production; as well as new restrictions for pollution discharge and more stringent targets for pollution loads in relation to different water function zones (Articles 19 to 21). A new water resource management responsibility and assessment system is created by Article 22 with a view to hold local government officials (above county level) accountable for the state of the water environment. It also emphasizes that water quantity and quality monitoring capabilities need to be reinforced to provide support for the assessment. The legal status of the policy in relation to water-related laws in place is not clear, but the policy text seems to reinforce implementation of existent laws through the political system in place, i.e. the Communist Party structures.

Work to implement the new policy is underway. In January 2012, the State Council released its “Opinions on Implementing the Strictest Water Resources management System” introduced in Central Document N.1. In this context, the central government also announced that 1.8 trillion yuan (about 180 million £) have been earmarked for the setting up of a nationwide information system for water resources by 2015 (Peng Tian 2012).

**Water Quality Governance in the Pearl River Basin**

This section will summarise the case of the Pearl River basin to illustrate dynamics of inter-governmental relations in episodes concerned with the monitoring of water quality at catchment scale. This, however, requires a brief introduction to the basin’s natural features, water environment conditions as well as institutional structures in place.

**The Pearl River Basin – Features and Challenges**

The Pearl River basin (Figure 1) is the 4th largest in China as far as drainage basin is concerned. It covers a total area of 442,527 km² in Southern China and is formed by convergence of the Xijiang (“the West River”), the Beijiang (“the North River”), and the Dongjiang (“the East River”). The basin extends over six provinces (Yunnan, Guizhou, Guangxi, Guangdong, Jiangxi and Hunan), and includes two special administrative regions (Hong Kong and Macau) located in the delta.

The Pearl River basin is heavily influenced by the south-west monsoon, which is characterized by a wet season that runs from April to September, and accounts for about 80 per cent of total annual rainfall. In the province of Guangdong, at the lowest reaches of the basin, average water availability per capita has been 1,927 m³, well below the world average of 8,210 m³ (Sadhwani et al. 2009).

Excluding the population of Hong Kong (estimated at about 8 million) and Macau SAR (about 500,000), the Pearl River basin population was estimated by the Pearl River Water Resources Commission (PRWRC)
to be 168 million inhabitants in 2000 (PRWRC, 2012). Intense industrialisation and urbanisation started
with the onset of economic reforms in 1979 when two of the first four special economic zones (SEZs)
were created in the Pearl River Delta: the SEZ of Shenzhen was created in the land adjacent to Hong
Kong, and the SEZ of Zhuhai in the land adjacent to Macau.

Figure 1 – The Pearl River Basin

In 2001, about 10% of the monitored sections registered water quality grade IV, V or worse, while this
I, II or III may serve as sources of drinking water. The major pollution sources are sewage, pesticides and
industrial wastes in the form of ammonia nitrogen and petroleum (MEP, 2009). There is great variety in
the type and intensity of anthropogenic change in different provinces of the basin, corresponding to
considerable disparities in economic development. In the jurisdictions located in the lower reaches and
delta, namely Hong Kong, Macau and Guangdong, the GDP per capita was 25,586 USD, 24,246 and 2,983
respectively. In the upper and middle reaches, namely in the provinces of Guangxi, Yunnan and Guizhou,
the figures were 1,073, 956 and 617 respectively, showing a sharp decline in the upstream direction (Xu
and Yeh, 2011).

Access to safe drinking water is not fully guaranteed in the region. Pollution affects drinking water
sources in both urban and rural areas. In Guangdong, the province in the lowest reach of the basin,
Chinese authorities reported in 2007 that about 40% of the province’s rivers were too polluted to be
used as sources of drinking water. About 16 million residents faced water shortages on account of
pollution in that year (Yeung 2007).

The number of environmental accidents has been on the rise, with 912 accidents in the five year period
from 2006 to 2010, but 542 in 2011 alone (Peng Tian 2012). It was found that 48% of these happened
during production processes and 14% were caused by traffic accidents. In the period from 1992 to 2008,
Guangxi and Guangdong, occupying approximately 80% of the Pearl River Basin area, were the first and
fifth provinces most affected by water pollution accidents (Yuan et al. 2011).

In January 2012, one of the most serious water pollution accidents in the Pearl River during the last
three decades came to public attention. A spill of a total of 21 tonnes of cadmium took place in the
Longjiang, a tributary of the Pearl River located in the province of Guangxi. The spill, caused by metal
smelters, was equivalent to about two thirds of the total amount of cadmium discharged nationwide in
2010 and considerably endangered drinking water sources and hence the health of local populations
(Shi 2012).

Institutional Structures for Water Quality Governance in the Pearl River

The Pearl River Water Resources Commission (PRWRC) was set up in 1979 as a regional office of the
MWR. Its structure also comprises a Water Resources Protection Bureau (PRWRPB), whose
management was originally meant to be shared by a director appointed by the MWR and a director
appointed by the MEP. For several years now, the MEP has not appointed any director to the post, effectively ignoring the only point of official contact with the water administration at the river basin scale (Interview PRWRPB, 2012).

One of the priorities of the PRWRC has been the creation of an information sharing mechanism gathering the water resources departments and the environmental protection departments of all the provinces in the basin, namely Yunnan, Guizhou, Guangxi, Guangdong, Hunan and Jiangxi. Such a development would facilitate the work of water resources protection and pollution control, with access to an integrated set of data and information on pollution discharges and on carrying capacity in different river sections. This initiative has met with resistance from environmental protection leaders, and was not given the official backing of the Ministry of Environmental Protection at the national level. However, it is interesting to note that two neighbouring provinces that suffer chronic pollution in their shared watercourses, the provinces of Guizhou (upstream) and Guangxi (downstream), have now established an information exchange system involving their water resources and environmental protection departments. Pollution sources in Guizhou were endangering drinking water sources in Guangxi but the situation has reportedly improved since the establishment of this mechanism under the coordination of the PRWRC (Meeting PRWRC01.05, 2010; Meeting RiBaGo/PRWRC, 2011).

Figure 2 – Jurisdictions involved in the Governance of the Pearl River; prepared by the author on the basis of Wang et al. 2007

Trans-jurisdictional problems, particularly trans-provincial water pollution, continue to be particularly difficult for the environmental protection apparatus to address effectively (Huan 2011). Since 2006, Regional Supervision Centres for Environmental Protection have been established in order to supervise local governments in the implementation of policies, rules and standards; to check environmental law enforcement; to settle environmental disputes in trans-provincial areas and river basins; to handle environmental accidents; and to deal with complaints related to trans-provincial pollution. They coordinate the work of local environmental protection agencies, although they lack the authority to issue instructions on their daily work (Zhang 2006, Huan 2011). The South China Supervisory Centre was created in 2006 with a staff of 34, and, although its objectives concern river basin-wide water pollution, its jurisdiction excludes three important provinces within the Pearl River Basin, namely Yunnan, Guizhou and Jiangxi (Huan 2011).

Water pollution control is financed and managed at the local scale by local governments and their environmental protection bureaus, with no involvement from River Basin Commissions. This is visible in the way some of the water pollution incidents have been dealt with in the Pearl River basin. The PRWRC is required by ministerial regulations to perform investigative monitoring of the site of an accident, but its presence was not welcomed by provincial authorities and environmental protection bureaus controlling the area of an accident in 2005 (Meeting PRWRC1.05, 2010). In such cases, access of the PRWRC to an accident site may depend on the existence of personal connections between leaders. The
PRWRC team was allowed access to another accident site in the province of Guangxi on another occasion, largely on account of personal links (Meeting PRWRC1.05, 2010).

In 2006 a National Plan for Environmental Emergency Response was approved and in 2007 a National Emergency Response Law as passed. Nevertheless, the focus is on response and after incident treatment, rather than routine pollution prevention, according to some analysts (Xie et al. 2009).

The guidance policy document for the implementation of the Central Document N.1 (“Opinions on Implementing the Strictest Water Resources management System”), approved by the State Council in January 2012, has given fresh political impetus to address these management challenges. The document requires local governments to strengthen emergency management of drinking water sources; improve emergency plans for drinking water pollution accidents and establish reserve drinking water sources.

**Concluding remarks**

The findings presented illustrate how the competitive nature of China’s political and economic system in the reform era has influenced the management of water quality issues at river basin scale. The traditional vertical line of authority, controlling how power is exercised by provincial and local ministerial departments, is now balanced by horizontal lines of authority as a result of the strong financial and economic power that provincial and lower levels of government have gathered throughout the process of economic reform and decentralisation.

Controlling up to 70% of all government spending (Landry 2008), local governments with higher revenue and financial autonomy exercise more bargaining power vis-a-vis the central government and may be able to ignore certain directives that compromise economic growth and their position in relation to other neighbouring local governments. The situation does not favour the protection of common pool resources with high mobility such as cross-jurisdictional water resources, which require more collective action and collaborative institutional arrangements than competition amongst territorial and functional jurisdictions.

Patterns of inter-provincial and inter-municipal rivalry have emerged in the search for fast economic growth opportunities and preferential investment policies from the central government, with pollution costs being passed on to downstream communities. In addition, cross-sectoral fragmentation has resulted in limited capacity to monitor the quality of water bodies and river systems and to understand both gradual and sudden changes in its chemical and biological conditions. There is also limited ability to consider environmental processes at the river basin scale and to seek management objectives, measures and funding at this scale, which derives from the strong political power awarded to provincial governments during the economic reform processes. Current river basin organisations are not invested with sufficient political weight to induce change in the behaviour of local governments polluters and users of the water environment.

In regard to the adaptive capacity of the current water governance system in China, the development of competent monitoring systems and decision support systems is key to its capacity to respond and adapt to environmental challenges. However, the current political and economic conditions of the country,
and its impact on inter-governmental relations, seem to hinder the construction of such monitoring systems and to render the governance of the country’s water environment maladaptive.

The enactment of the new Central Document n.1 on “Accelerating Water Conservancy Reform and Development” is meaningful and shows that Chinese central authorities are actively addressing the gaps in the water governance system. It is, however, still unclear how the assessment of local government leaders will be implemented in an impartial, “scientific” manner when the data upon which assessments are based suffers from lack of transparency and local government leaders often withhold data and information from other government leaders and organisations.

The emphasis on rapid economic development that provides incentives for the current behaviour of local leaders is still maintained in the new water policy. The press release from the State Council introducing the new Central Document n.1 concludes with a statement emphasizing how the implementation of the new policy will support “long-term, stable and rapid economic development” (PRC State Council’s Information Office, 2011).

Systematic inter-governmental communication mechanisms across local jurisdictions and administrative sectors will be necessary for the development of a more adaptive and effective water governance system at the river basin scale that is capable of safeguarding drinking water safety and protecting the health of local populations. Strong benefits and incentives will need to be in place for that effect.
References


PRC State Council’s Information Office (2011) “Speech in the News Conference of State Council’s Information Office”, Beijing


