Ecological Management of Beijing-Tianjin-Hebei Urban Agglomeration: The Tragedy of Commons and System Solution*

Wang Bo
Beijing Normal University, Beijing, China

Liyun Xi
Peking University, Beijing, China

The continuous integration development trend of China urban agglomerations will not only further promote economic development but also cause the loss of the natural buffer zone which could protect the regional environment, leading to the combined effects of environmental pollution. Hardin’s “Tragedy of the Commons”, “Prisoner’s Dilemma”, Olson’s “Logic of Collective Action”, and other theoretical models demonstrated the tragedy result of ineffective governance of regional ecology. Clear property rights, centralized governance, social autonomy, and competitive-collaborative model based on comparative advantage of the organization are four kinds of “system solution” for regional ecological management, providing scientific management tool for urban agglomeration management in different regional contexts.

Keywords: Beijing-Tianjin-Hebei, urban agglomeration, regional ecological management, tragedy of the commons, system solutions

Background: Urban Agglomeration and Regional Environment

In the context of globalization and urbanization, the close interaction among cities, the diversification of urban regional, and the complexity of urban regional spatial system, carried out new regional spatial organization form, leading to urban agglomeration. The urban agglomeration region becomes the center of global politics, economy, culture and information. Regional management of urban agglomeration has also become a hot issue of theory and practice. In 1961, Geographer Jean Gottmann, the director of the Institute of Geography, University of Oxford, proposed the concept of Megalopolis in Megalopolis: The Urbanized Northeastern Seaboard of the United States. Yuemin Ning translated Megalopolis as “huge megalopolis” in 1983 (Ding & Ning, 1983, p. 324). Yixing Zhou presented the concept of Metropolitan Interlocking Region as a more advanced spatial form of urban agglomeration (Zhou, 1988). Xueqiang Xu used “metropolitan area” to unify the concept of Megalopolis and Metropolitan Interlocking Region (Xu, 1994). Some scholars have put forward concepts such as “dense urban areas” (Xu, 1995), “Metropolitan Regions” (Xue, 2005), and

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Corresponding author: Wang Bo, Ph.D., professor, School of Government Management, Beijing Normal University; visiting scholar at Harvard University (2011-2012); research field: regional public governance. E-mail: wwwbo@sina.com.

Liyun Xi, Ph.D., full-time researcher, Institute of Political Development and Government Administration, Peking University; research field: public governance.
“quasi-Metropolitan Interlocking Region” (Chen, 1997).

Shimou Yao defined urban agglomeration as a relatively complete urban complex, constituted by a considerable number of cities with different natures, types and grades of the scale in a particular geographical area, relying on certain natural environmental conditions, with one or two large mega-cities as a regional core of the economy, developing the intrinsic link between cities with modern transport and information network (Yao, 1992, p. 87). Guoping Li said:

The urban agglomeration, urban population, Metropolitan Interlocking Region, or mega-cities area, all mean net type regional aggregation of the basic factors of production (such as population, land, resources, capital, etc.) and higher production elements (such as knowledge, high-tech and personnel, research institutions, leading discipline, transnational corporations and other modern communication networks) in the process of marketization, industrialization and informatization, embodying the formation of some city network aggregation or regional urban communities with one or more mega-cities as the core. (Li, 2012, p. 87)

Chinese Academy of Social Sciences has proposed that China had formed 15 urban agglomerations in 2006 Blue Book of City Competitiveness. Institute of Geographic Sciences and Natural Resources Research pointed out that China is creating 23 urban agglomerations in 2010 China Urban Agglomeration Development Report. Department of Housing proposed 13 urban agglomerations in the National Urban System Plan (2005-2020). Some scholars have pointed out that China’s national spatial structure gradually formed the “Ten Metropolitans” (Xiao, 2009, p. 55): Beijing-Tianjin-Hebei urban agglomeration, Yangtze River Delta city group, the Pearl River Delta city group, Shandong Peninsula, South Liaoning urban agglomeration, Central plains city, Yangtze River city group, West Coast Cities, Chongqing urban agglomerations, and Guanzhong urban agglomeration. Table 1 shows five urban agglomerations in coastal regions of China.

Since the 1980s, the Pearl River Delta region has become China’s Pearl River Delta city group with Shenzhen as a leader. Since the 1990s, along with the displacement of regional economic development axis from south to north, Yangtze River Delta city group has rapidly developed into the second pole of China’s economy with Shanghai Pudong New Area as a hub. On entering the 21st century, the economic development axis of coastal regional continues to move northward. Beijing-Tianjin-Hebei city group became the third pole of economic development in China. Tianjin, with its advantages in Bohai-Rim Economic Circle, began to play the role of explorer in China’s economic and social comprehensive supporting reform.

From the national macro-level, the development trend of coastal economy has changed from three-pole isolated development to three-pole continuous integration. “Pearl River Delta city group” has formed the first development pole after three decades of development. “Yangtze River Delta city group” constituted the second development pole with coordinated, complementary and beneficial interaction of Shanghai, Zhejiang, and Jiangsu. Beijing-Tianjin-Hebei area is building the “third development pole” in China. Currently, Beijing-Tianjin-Hebei urban agglomeration has been formed the “Nuclear-Point-Axis-Zone” spatial pattern with Beijing, Tianjin as dual core, Shijiazhuang, Tangshan as the regional center, including many small regional cities. Regional economy interacts more closely day by day, the “regional flow” in urban agglomerations convects continuously, and the regional flow, constituted by factors of production, such as personnel flow, logistics, technology flow, information flow, capital flow and other flow of production factors, interacts more and more closely, like an “invisible hand” winding each city as a whole. With the processes of urbanization and regional integration, the construction of regional cooperation of Beijing-Tianjin-Hebei city group increases continuously, and the degree of regional public governance unification is raised increasingly.
With the spread of China’s urban agglomerations, the three core urban agglomerations have shown the continuous integration developmental trend. This will further promote the development of China’s coastal economic belt, also cause the loss of natural environmental buffer zone, leading to the combined effects of environmental pollution. Beijing-Tianjin-Hebei urban agglomeration, the Yangtze River Delta agglomeration, and Pearl River Delta agglomeration account for about 8% of national territory, but consume 42% of the coal, 52% of the gasoline and diesel, and emit 30% of total sulfur dioxide, nitrogen oxides and soot. There are more than 100 hazy days annually in these areas, in some cities, even more than 200 days. The system of regional environmental governance needs to be reconstructed.

Table 1

<table>
<thead>
<tr>
<th>Name</th>
<th>Range</th>
<th>Geographic position</th>
<th>Basic characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban agglomeration in</td>
<td></td>
<td></td>
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<tr>
<td>Mid-south Liaoning</td>
<td>With Shenyang, Dalian as center, 8 cities</td>
<td>Located in Liaodong Peninsula and north rim of Bohai</td>
<td>The population is 27.6 million, and GDP is RMB 1,374.9 billion, accounting for 65% and</td>
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<tr>
<td></td>
<td>are included, such as Anshan, Fushun,</td>
<td>Sea Economic Zone</td>
<td>81% of the Liaoning Province, respectively.</td>
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<tr>
<td></td>
<td>Benxi, Yingkou, Liaoyang, etc.</td>
<td></td>
<td></td>
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<tr>
<td>Urban agglomeration in</td>
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<td></td>
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<tr>
<td>Beijing-Tianjin-Hebei</td>
<td>With Beijing, Tianjin as center, 10 cities</td>
<td>Lying in north of North China Plain</td>
<td>The population is 1,307.21 million, and GDP is RMB 3,353.26 billion, accounting for 5.5%</td>
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<td></td>
<td>are included, such as Tangshan, Qinhuangdao,</td>
<td></td>
<td>and 8.4% of China, respectively.</td>
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<td></td>
<td>Baoding, Zhangjiakou, etc.</td>
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<td>Urban agglomeration in</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Shandong Peninsular</td>
<td>8 cities are included, such as Jinan,</td>
<td>Lying in juncture area of Yellow River Economic Belt</td>
<td>The population is 40.3 million, accounting for 42.66% of the Shandong Province, and GDP</td>
</tr>
<tr>
<td></td>
<td>Qingdao, Yantai, Zibo, Weihai, Rizhao,</td>
<td>and Bohai Economic Zone</td>
<td>is RMB 2,176.35 billion, 5.4% of China.</td>
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<td></td>
<td>etc.</td>
<td></td>
<td></td>
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<tr>
<td>Urban agglomeration in</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yangtze River Delta</td>
<td>With Shanghai as center, 20 cities are</td>
<td>Lying in junction area of Yangtze River development</td>
<td>The population is 116.7 million, and GDP is RMB 6,829.73 billion, accounting for 8.7% and</td>
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<tr>
<td></td>
<td>included, such as Nanjing, Suzhou, Wuxi,</td>
<td>axis and coastal development axis, crossing Jiangsu</td>
<td>17.02% of China, respectively.</td>
</tr>
<tr>
<td></td>
<td>Zhenjiang, Nantong, Hangzhou, Ningbo,</td>
<td>Province, Zhejiang Province and Shanghai Municipality</td>
<td></td>
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<tr>
<td></td>
<td>Jiading, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban agglomeration in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearl River Delta</td>
<td>With Guangzhou, Shenzhen as center, 9</td>
<td>Lying in marine estuary of the Pearl River in central</td>
<td>The population is 29.67 million, accounting for 35.5% of the Guangdong Province, and GDP</td>
</tr>
<tr>
<td></td>
<td>cities are included, such as Zhuhai,</td>
<td>south area of Guangdong Province</td>
<td>is RMB 3,214.7 billion, 8.01% of China.</td>
</tr>
<tr>
<td></td>
<td>Foshan, Huizhou, Dongguan, Zhongshan, etc.</td>
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“Tragedy of the Commons” of the Regional Ecology

In 1833, William Forster Lloyd proposed the academic concept of “Tragedy of the Commons” (p. 98) in the book which discussed about population. In 1968, British scientist Garrett Hardin published “Tragedy of the Commons” on Science; an article described how the individual’s rational pursuit of maximum benefits causes the damage of public interest. In accordance with Hardin’s conceived Shepherds Game model, there is a public pasture and a group of insatiable sheep grazing in the wild, although each sheep knows this may lead to pasture degradation. However, if the sheep chooses not to eat, not only would it lose the current benefits but also it has to share the consequence of pasture degradation. The Tragedy of the Commons phenomenon shows that, for individuals who pursue the maximum interests, it is hard to achieve public interest through collective action.
ECOLOGICAL MANAGEMENT OF BEIJING-TIANJIN-HEBEI URBAN AGGLOMERATION

and cooperation.

In a society where public goods are shared, everyone, that is, all the people are pursuing their own best interests… This is a tragedy; every person is pursuing his own best interests. The freedom to use public goods will perish all people. (Hardin, 1968)

Public goods have the property of indivisible and non-exclusive consumption and income and have different needs and supply curves from those of personal items. Social individuals may have the “free riding” motive to consume public goods when they are enjoying the public service (urban parks, green spaces, public gardens, and environmental sanitation). The non-exclusive property of public goods leads the society members to believe that one can still use public goods even though he does not undertake costs of the production and provision of public goods. The public good, which belongs to greatest number often, becomes the one to be the least taken care of. People care for their own well-being yet ignore public goods; as for all the public goods, he only pays attention to those related to him personally at most (Aristotle, 1983, p. 30). Therefore, public goods are often in a state of lacking effective supply. In addition, people differ on preferences for public goods in terms of quantity and quality, “The government’s provision of public goods tends to reflect median voters” preferences. Some people’s excessive demand for public goods cannot be satisfied, the other part of people’s differentiated tastes are not met” (Wang, 2003, p. 32). This would further exacerbate the scarcity of public services, pushing it into a “tragedy of the commons”.

The ecological pattern of Beijing-Tianjin-Hebei region is presented as follows: mountain ecological reserve, piedmont region of protection and utilization, plains exploitation zones, coastal development and protection zones (see Figure 1).

![Figure 1. The ecological pattern of Beijing-Tianjin-Hebei region.](image)

Since reform and opening, Beijing-Tianjin-Hebei area formed the economic zone based on administrative zone, called the “Administrative Economic Zone” (Liu, 1996, p. 3), a self-contained, relatively independent
economic zone in which the economic activities are organized according to administrative region. Currently, Beijing-Tianjin-Hebei region has a distinct “administrative zone economy” property, the isolation of administrative zone resulted in significant negative externalities of pollution, hindering the integrated governance of regional environment. Beijing-Tianjin-Hebei urban agglomeration showed deterioration of natural ecology: vegetation degradation, soil erosion, siltation of rivers, sandstorms, etc. (see Figure 2). Environmental degradation has become a bottleneck that constrains sustainable development of regional economic and social development.

![Figure 2. Vegetation distribution of Beijing-Tianjin-Hebei area (2010).](image)

The water quality of Beijing-Tianjin-Hebei area is relatively poorer (see Figure 3).

Currently, the metropolitan average water volume of Beijing-Tianjin-Hebei area accounted for only 3.6% in the country, the per-capita water resources in Beijing-Tianjin-Hebei area is 1/2 of the Yangtze River Delta, less than 1/5 of the Pearl River Delta and the national average, far below the internationally recognized 1,000 cubic meters cordon. (Tianjin Economy Research Group, 2010, p. 8)

Since 2013, China’s central and eastern regions recurred haze, air pollution is serious. In the process of rapid industrialization and urbanization in this country, the high energy consumption, high emission, heavy pollution, and the rapid growth in the amount of city vehicle resulted that the total emission of air pollutants far exceeded the capacity of environment, forming the “common tragedy” of large and medium-sized city’s haze. Ministry of Environmental Protection released the air quality reports of 114 cities in September 2013. The top 13 seriously polluted cities are Xingtai, Shijiazhuang, Handan, Hengshui, Tangshan, Baoding, Jinan, Langfang, Zhengzhou, Xi’an, Tianjin, Cangzhou, and Beijing, most of which are located in Beijing-Tianjin-Hebei Urban Agglomeration. Tianjin ranked 11th, while Beijing ranked 13th (see Table 2).

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1 See CGA Central Database of Harvard University.
The Heaviest Polluted Cities in China, September 2013

<table>
<thead>
<tr>
<th>City</th>
<th>AQI (Air Quality Index)</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Xingtai</td>
<td>191.05</td>
<td>140.47</td>
</tr>
<tr>
<td>2. Shijiazhuang</td>
<td>172.06</td>
<td>127.57</td>
</tr>
<tr>
<td>3. Handan</td>
<td>147.69</td>
<td>107</td>
</tr>
<tr>
<td>4. Hengshui</td>
<td>139.09</td>
<td>101.67</td>
</tr>
<tr>
<td>5. Tangshan</td>
<td>137.67</td>
<td>99.3</td>
</tr>
<tr>
<td>6. Baoding</td>
<td>130.26</td>
<td>89.17</td>
</tr>
<tr>
<td>7. Jinan</td>
<td>122.34</td>
<td>86.93</td>
</tr>
<tr>
<td>8. Langfang</td>
<td>121.07</td>
<td>86.13</td>
</tr>
<tr>
<td>9. Zhengzhou</td>
<td>119.24</td>
<td>87.77</td>
</tr>
<tr>
<td>10. Xi'an</td>
<td>109.46</td>
<td>77.33</td>
</tr>
<tr>
<td>11. Tianjin</td>
<td>109.33</td>
<td>77.3</td>
</tr>
<tr>
<td>12. Cangzhou</td>
<td>103.93</td>
<td>76.07</td>
</tr>
<tr>
<td>13. Beijing</td>
<td>103.34</td>
<td>75.67</td>
</tr>
</tbody>
</table>

Note: Source: Ministry of Environmental Protection of China (http://www.zhb.gov.cn/).

The air quality of Beijing-Tianjin-Hebei region is close to public tolerance limits.

“If the problem of resource and environmental constraints is not solved, the development will be ‘starved’, people’s livelihood will be ‘compromised’ … let breathing clean air, drinking clean water and eating safe food be an important content of development” (Li, 2013, p. 1). The strong haze and pollution resulted that the traditional path of economic development cannot continue; it also forced the innovation of regional management. Beijing-Tianjin-Hebei urban agglomeration needs to improve the new mechanisms of joint prevention and control of air pollution, including the system of joint law enforcement and supervision of regional atmospheric environment, the emergency response mechanism for pollution event, environmental

2 See CGA Central Database of Harvard University.
information sharing mechanism, inter-regional pollution prevention treatment and consultation mechanism for coordination, the early warning and emergency response mechanism for regional air pollution. Simultaneously, the industrial structure in the region should be upgraded. How can we get out of the common’s tragedy of environmental governance? As far as theory and institution practice are concerned, there are four main system solutions.

**Solutions to the Governance: Four Kinds of “System Solution”**

**The First Solution: Clearing Property Rights, Internalizing Negative Externalities**

Coase (1991) said:

In the case of clear property rights, if transaction costs are zero or small enough to be negligible, the market mechanism can internalize the externalities, allocate resources optimally, this is the first Coase Theorem, if transaction costs are not zero or not small enough to be negligible, then the rational choice of system can reduce costs, internalize externalities and allocate resources optimally. (p. 57)

Coase Theorem states that as long as the property rights are defined, many economic activities that have external effects can achieve optimal welfare effects through appropriate contractual arrangements.

The so-called Coase Theorem proved that as long as cleared the private property, no matter this private property belongs to whom and how to assign it, the optimal resource allocation and institutional arrangements for the whole society can be found through free selling and buying of property and free choice of private contractual relationships. (Yang, 1997, pp. 16-17)

The reason for “Tragedy of the Commons” is that the private cost is less than the social cost, the property rights are unclear, therefore it is necessary to clear the property rights and internalize negative externalities.

Yanshan area north of Beijing-Tianjin-Hebei and western Taihang Mountain area are the key components of “capital city and its environs”. “Beijing-Zhangjiakou-Chengde ecological zone” constituted ecological barrier for Beijing and Beijing-Tianjin-Hebei metropolitan. To ensure water security in Beijing, there is no long-term industrial development in Hualia west of Beijing, Chengde, Fengning, Luanping and other places north of Beijing, which are in upstream of Guanting and Miyun Reservoir.

There is a huge economical gap between these areas and Beijing-Tianjin area, especially Zhangjiakou, Chengde, Baoding mountainous area, which have many state-level poverty-stricken counties, the eminent development gap affected the function of these areas as “ecological barrier”. Fully explore ecological, cultural and tourism resources of Beijing-Tianjin-Hebei ecological and cultural zone, reducing regional disparities and achieve balanced regional development. (Wu, 2006, p. 132)

There is an urgent need to establish and improve the ecological and economic compensation mechanism within the region, plan and lay out the regional economic development, environmental protection, and maintain balance between economic development and environmental protection through benefit compensation. By remodeling costs-benefit mechanisms, regional benefits could be shared by all cites in the urban agglomeration. Kaldor-Hicks proposed the principle “Those who benefits compensates”, in order to achieve optimal allocation of ecological resources through giving compensation to the losers.

In Figure 4, AC line represents the marginal ecological injured party’s original personal income; OF line represents marginal external costs. According to Kaldor-Hicks improvement principles, ecological compensation reduces the marginal external cost. With the increase of marginal income, MNPB’ line and
MEC’ line are formed, and tend to reach MNPB’ = MEC’, promoting regional general welfare. Regional ecological beneficiaries (Beijing and Tianjin) can promote regional environmental protection from ecological compensation, counterpart support and economic cooperation. In order to achieve balanced regional industrial development and the environment, ecological compensation should adhere to three principles: the polluter pays principle (PPP), the user pays principle (UPP), and the beneficiary pays principle (BPP).

**Figure 4.** An economic analysis of regional ecological compensation. Source: Wang (2010).

In addition, the public governance process of Beijing-Tianjin-Hebei urban agglomeration is not a game, but infinitely repeated games among Beijing, Tianjin, Hebei and other cities. In the process of infinitely repeated games, taking into account the:

Long-term evenly matched battle, could only result in depletion of their financial intelligence, it is difficult to meet the next round of competition and innovation, they will tend to forsake short-term opportunity action, and more often adopt a cooperative game strategy in order to obtain long-term returns. (Bleeke & Ernst, 1998, p. 1)

Although the “Prisoner’s Dilemma” leads to the city intergovernmental uncooperative balanced position, the repeated game among the city governments could improve the probability of regional ecological cooperation.

**The Second Solution: Government Intervention, Regional Governance Institutions to Solve the “Commons’ Dilemma”**

Unlike Coase, Stiglitz proposed “non-decentralization laws”: the market will not be able to achieve efficient allocation without government intervention, the market should rely on government regulation, and regulation according to the law is better than fine. He opposed the idea of Coase, believed that externality problems such as regional air pollution are hard to clear property rights problems. What’s more, “private solution” cannot overcome the “free-riding” issue, high transaction costs will result in inefficiency. It is better to simply consider the “ready” government as a collective organization responsible for this “market issues” than to establish a “new” organization voluntarily and unitedly, it can also save transaction costs (Stiglitz, 1998, p. 8). But he also pointed out that the government should pay attention to two points of market
regulation, neither overestimate the effect of direct government control, nor underestimate the ability of indirect regulation.

The eco-building of Beijing-Tianjin-Hebei urban agglomeration needs cooperation among city governments, beginning with the upstream region as a whole. This requires integrating Beijing, Tianjin and Hebei into a system, protecting water resources from upstream to downstream areas in the aggregation, improving environment systematically. It has launched a series of ecological cooperation between Beijing and Zhangjiakou-Chengde region, and it did have some actions. How can we better build sustainable regional ecological governance mechanisms? Domestic scholars have proposed many solutions: “administrative division adjustment programs”, “Zhangjiakou-Chengde ecological and economic comprehensive experimental zone”, “Beijing and Tianjin sandstorm source control program”, and so on. Some scholars believe that in the context of regional integration, as Zhangjiakou-Chengdu region has become Beijing’s ecological barrier and has a direct impact on Beijing’s ecological and water quality, the government can set up Zhangjiakou-Chengdu region as “Zhangjiakou-Chengdu ecological economic comprehensive experimental zone” which Beijing also takes part in, establish Beijing-North Hebei Basin Management Committee, integrate Zhangjiakou-Chengde area into Beijing, strengthen regional ecological security, and promote regional sustainable development through raising the solution to Beijing’s ecological environment and water issues up to national level policy issues.

Regional integration needs executive body of regional contracts. Under the impetus of the Central Government, Beijing, Tianjin and Hebei can set up “Beijing, Tianjin and Hebei Governance Committee” cooperatively, which should surpass existing regional cooperation mechanisms, and is a more consistent, higher level regional authority controlling more real power. Regional incremental benefits should be distributed equally through just rules of regional contracts, leading the regions to cooperate with the drive of benefit guide.

The Prisoner’s Dilemma model leads to pessimistic conclusion for regional cooperation, because “non-cooperative” is a strictly dominant strategy for both parties in a game. However, the rule can be changed. The rule system of urban agglomeration governance is unlike that of Prisoner’s Dilemma. Different rules lead to different return series systems and trigger strategic change. Based on regional resources, regional governance institution plans and lays out the economic development, environmental protection, remodeling costs—benefit mechanism to guide ecological cooperation of cities in the aggregations. The city in breach must be punished. Penalties include: stopping cooperation income distribution, deducting net margin, cancelling its reciprocal rights, and that the defaulting party will be isolated by other regional municipal governments. Clear expected penalties will increase city government’s cost of uncooperative strategy, which is conducive to the realization of regional ecological cooperation.

The Third Solution: A Range of Social Autonomy

Elinor Ostrom said: Leviathan or privatization is not the only effective solution, which she analyzed from an empirical point of view, and the public water governance of human society is not, in fact, dependent on the state nor the market.

Most of the modern economic theory believed the world was under the charge of a government (rather than many governments), and looked at the world from the government perspective... whenever the market failures, it rushed to rescue, it is economists’ task to suggest when and how to save. On the contrary, private individuals have little or no ability to solve the collective problems they face. This theory resulted in some misinterpretations of important economic and
political issues. (Sugden, 1986, p. 54)

Ostrom pointed out the third viewpoint beyond the government and the market: governing the commons through social collective action. She first summarized the theoretical models people used to analyze public affairs solution, including Harding’s “Tragedy of the Commons”, “Prisoner’s Dilemma”, and Olson’s “Logic of Collective Action”; these theoretical models all illustrated tragic results of lack of effective governance in public affairs. She believed that the toolbox of policy analysts has a variety of tools, but still lacks “a concrete definite theory of collective action, by virtue of this theory, a group of the parties are able to organize themselves voluntarily, in order to maintain remaining formed by their own efforts” (Ostrom, 1999, p. 4).

The Fourth Solution: Competition-Collaboration Based on the Organization’s Comparative Advantages

The governance of public affairs still needs theoretical thinking and practical exploration. We can still get a valuable revelation through management practices in eastern and western urban agglomeration. That is to establish supportive cooperation-competition mechanism among civil society, government and market, based on comparative advantages of public sector, private sector and the third sector, to help achieve marketization and socialization of public services through competition, optimize allocation of social resources, and satisfy the demand for regional public goods.

Since the 1990s, the new regionalism perspective has gradually formed. New regionalism, based on the experiences of urban agglomerations governance in North America and Western Europe, believed that the realization of regional governance can be achieved through cooperative system arrangement among city governments. New regionalism stressed both the collaboration between governments, and the public-private sector collaboration. New regionalism advocates establishing cooperative, collaborative network relationship between governmental and non-governmental organizations, and also among private sectors, in order to effectively manage regional issues. Regional governance is a partnership collaboration process between the public and private sector.

The nature of public sector, private sector and the third sector determines that each of them has their own advantages. David Osborne said: the main advantages of the public sector are stability and freedom from the impact of preference; the main advantages of private sector are innovation ability, the ability to produce capital, the ability to obtain economies of scale; the third sector’s main advantages are compassion, responsibility, and the ability to generate trust. Therefore, the public sector is best for policy management, management implementation, implementation of fairness, prevention of discrimination, and enhancement of social cohesion. Private sector is best suited for economic tasks, investment, tasks generating profits. The third sector is best for social services, volunteer labor tasks. As the public sector, the private sector and the third sector have their own advantages and disadvantages, which requires the helmsman to combine scarce public and private resources through competitive mechanism, break the government monopoly of public goods supply, introduce social resource, deliver part of public service functions to enterprises, intermediary organizations and community groups, achieve “the official and civilians cooperation” in local public services, and improve public service performance.

In the governance model, the government function has changed, the steering function has gradually separated from the rowing function. “The public institution functions more like facilitator, broker, seed capitalists in today’s and early market rather than the bulk supplier for specific goods or services” (Osborne & Plastrik, 1996, p. 30). The main duty of the government lies at steering; the steersman should get a full picture
of all the problems and possibilities, and balance the competing demands for resources, then combine all resources, so that other people can solve these problems, that is, the government should combine the scarce public and private resources to achieve the management target as a go-between. Governments need, in the first place, to reform public sector, on this basis, further introduce private capital, achieve the diversification of public services and the marketization and socialization of public service provision. The government is no longer the only public service provider, changed from public service monopoly to the public service supervisor, facilitator, and manager, in order to promote the multi-agent collaborative governance for regional ecological environment.

Conclusions and Reflection

The rapid development of China’s urban agglomeration is both an opportunity and a crisis. With the expansion of China’s urban agglomerations, the three core urban agglomerations have shown continuous integration development trend. This will not only further promote the development of China’s coastal economic belt, but also cause loss of natural buffers and digestive zone for protecting environment, leading to the combined effects of environmental pollution.

How can we solve the urban agglomeration regional ecological management dilemma? Chinese and foreign scholars did not give a single answer. Clear property rights, centralized governance, social autonomy, and competitive-collaboration based on the organization’s comparative advantage, are four options for regional ecological management. These four kinds of “system solution” are not always conflicting. At times they can be used independently, but they can also be used comprehensively, providing scientific management tool for urban agglomerations governance providing in different regional contexts.

References


