

Analysis on the Role of Government in the Construction of Sponge City

Taking the Construction of Wuhan Sponge City of Hunan as an Example

Jie Gu

School of Arts, Law and Economics
Wuhan University of Science and Technology
Wuhan, China

Huayan Cui

School of Arts, Law and Economics
Wuhan University of Science and Technology
Wuhan, China

Abstract—The construction of sponge city is designed to solve the problems of internal urban water retention and waterlogging, reduce the diffused pollution of water, improve water quality and repair water ecology. It is a concrete implementation path of ecological public management policy and is also a highly coordinated and innovative work, so it must be completed through the jointly cooperation of the relevant government departments and all the circles of the community. With the investigation and research of sponge city in Wuhan of Hubei as the breakthrough point, this paper summarizes and collates the actual role played by the government in the construction of sponge city in this city, and makes analysis and refinement on the dilemma faced by the government in the construction of sponge city, and finally gives suggestions on better development of sponge city construction for the government.

Keywords—sponge city; public management; the role of the government

I. INTRODUCTION

In recent years, due to the impact of El Niño and other climate change on China, the rainfall sharply increases in China's northern and western and coastal areas. Additionally, with the accelerated process of urbanization in China, the unreasonable rainwater management planning makes many cities become a "sea" in the rainy season. The construction of sponge city is a higher level of presentation of ecological infrastructure construction, and more is the strategic measures of China's water ecological civilization construction and the specific reflection.^[1]Premier Li Keqiang pointed out in the 2017 "Government Work Report" that we should properly arrange the ground underground construction of cities, start the three-year action to eliminate the key waterlogging section in the cities, promote the construction of sponge city. Hubei Province is known for its good reputation of thousands of lakes, and Wuhan is a city plenty of water; in April 2015, Wuhan City was selected to enter the list of cities announced by the Ministry of Finance for the 16 first pilots of sponge city construction. The sponge city construction of Wuhan City has a demonstration and leading role in the implementation of national sponge city construction, and has far-reaching significance for research of the role of governmental action in the process of sponge project.

II. THE ROLE OF THE GOVERNMENT IN THE CONSTRUCTION OF SPONGE CITY

In the implementation of all projects of sponge city, the government is not only a leader, a supporter, but also a propagandist, educator and a supervisor, and plays an important role in every stage of the project implementation. In the sponge city construction of Wuhan City, the government mainly plays the roles of five aspects, including policy development, planning guidance, financial support, organizational coordination, management and supervision.

A. Policy Development

The construction of sponge city is not only an ecological project, but also an important public management policy. It is the practical application of urban construction in the concept of green ecological civilization and also the only way for China to make urban construction in the future. In order to smoothly implement the public policy of sponge city construction, the government released a series of supporting policies. In 2014, the Ministry of Housing and Urban released the "Guide to Sponge City Construction"; in January 2015, the Ministry of Housing and Urban Construction issued the "Technical Guidelines for the Construction of Sponge Cities --- Low-Impact Development of Rainwater System Construction" to propose the basic requirements, control objectives, design and implementation programs, technical options and investment estimates for sponge cities; in July, the Ministry of Housing and Urban Construction issued the "Measures of Performance Evaluation and Assessment on the Sponge City Construction", to carry out the assessment and check standard from six aspects, including water ecology, water environment, water resources, water security, system establishment and implementation, and demonstration.

B. Planning Guidance

The development of governmental sponge city planning can transform the concept of the sponge city construction into concrete action direction to lead and guide the construction of the sponge city, so that the sponge concept runs through the overall planning and design of the city and blended in the reconstruction of old city and the construction of new city,

providing guarantee for the smooth construction of sponge city. In order to carry out the requirements for national ecological civilization construction, carry out the task of sponge city construction, systemically solve the current water problem of Wuhan, and fully build the national sponge city construction model with the Wuhan regional characteristics, Wuhan City Land Resources and Planning Bureau organized and prepared the "Special Planning of Wuhan Sponge City (2016-2030)". The plan is a recent specific program designed by the government in accordance with the goals of sponge city construction, providing a detailed implementation plan for the construction of Wuhan sponge city. The city land planning authority, water authority, garden and forestry authority and other industry authorities, develop the "Technology Guide to Wuhan Sponge City Construction" and other technical specifications and standard collective drawings in accordance with the goals and norms of sponge city construction, to guide the development of the project.

C. Financial Support

The process of sponge city construction is also the process of public service of the government, which involves the infrastructure construction of many cities, requires a lot of financial investment and other related funds to ensure the smooth development of the project. The sponge city of 7.5 km in the Qingshan Waterfront of Wuhan City costs a total of 2.8 billion for reconstruction, the pricing of permeable ground is up to 700 yuan per square meter, the Wuhan municipal government not only actively try hard to apply for national subsidies of sponge city construction, but also collects the financial funds of city and district, among which the municipal finance settle 400 million yuan each year at the minimum allocation of funds per year, and the People's Government of each pilot area respectively prepares at least 100 million yuan each year, specifically for the pilot project construction of sponge city. At the same time, the relevant governmental departments of sponge city construction try to get the support from all pilot areas in the layout of urban construction, to encourage them to make sponge reconstruction of roads, parks, community, providing substantial financial guarantee for the development of sponge city demonstration projects. In addition, the government of each pilot area also tries to apply the long-term loans from the bank in accordance with national preferential policies of sponge city construction, actively obtains the social capital investment, and makes efforts to raise funds for the sponge project construction.

D. Organization and Coordination

Sponge city construction is a very coordinated and creative task and must be completed jointly by the relevant government departments, so the relevant departments at all levels should get a close cooperation to guide the community to participate in funding, and gather the project cohesion. Wuhan City sets up the pilot task headquarters for the sponge city construction to make decision, coordination, supervision and fund allocation of the relevant policies and issues of the demonstration projects. The government and propaganda departments at all levels actively carry out promotion, to improve the public awareness of sponge city construction. For the sponge city construction, there five parties: designers, sponge companies,

constructors, the governmental coordinator and the civilians. The government coordinator is to provide the coordination among the design of designers, the implementation of sponge companies, the project development of constructors, and the response of the civilians, so as to make the project implemented smoothly.

E. Supervision and Management

Its success depends on construction, and more important is management. The government should formulate a scientific, reasonable and effective supervision and management system, so as to make effective supervision and management of all projects in the primary planning, medium implementation and future maintenance, and to ensure the quality of sponge projects. Sponge city should pay attention to infrastructure construction, but also to management and maintenance, and apply modern high technology to build the informatized and intelligent information monitoring platform and forecasting and dispatching management system.^[2]In the supervision of the sponge city, the sponge office of Qingshan demonstration area in Wuhan City strictly implements the regular meeting system, and convenes meetings at any time according to the specific circumstances of the project to coordinate various problems in the implementation of the project. The Urban Construction Bureau of the district sets up a special class of quality control, to make commission of the third-party testing agencies with relevant test qualification for spot quality check in the sponge construction sites of the whole district.

III. THE PREDICAMENT OF THE GOVERNMENT IN THE CONSTRUCTION OF SPONGE CITY

A. The Policies and Regulations Are Imperfect

In accordance with the requirements of the relevant documents of the General Office of the State Council and the General Office of the Hubei Provincial Government, Wuhan has released a number of control systems to spread the requirements of sponge city construction to the whole process of projects. However, due to lack of support from the upper regulations, there are still many practical problems during the promotion and pilot of sponge city, which cannot be effectively resolved according to the existing norms, and the existing norms are mostly the basic requirements, we should improve and refine the relevant laws and regulations, and form the standard system of sponge city.

B. The Technological Innovation Is to Be Upgraded

The sponge city is designed substantially to change the concept of traditional urban construction, to achieve the coordinative development of resources and environment.^[3]In the construction and promotion of the sponge city, there are still many technical problems that affect the implementation of the project. For the construction of sponge city, mostly the materials with water permeability are laid on the hardening surface of ground in community area, parks and crosswalks and so on, and there is pores on the surface of the permeable materials to achieve the purpose of rainwater penetration, while gravels and dust easily block the pores on the surface of

permeable materials in the rainy days, which will increase the difficulties of late cleaning and maintenance, and thus affect the water permeability effect. The initial purification of rainwater and the late collection technology is still to be solved.

C. The Introduction of Social Capital Is Difficult

Sponge city construction is a huge project and needs a huge amount of capital, so the social capital must be actively introduced. In accordance with the provisions of the current tax law, PPP project companies should pay the turnover tax and income tax for their service income from governmental purchase, which not only improves the service cost of governmental purchase, but also reduces the profit margins of PPP project companies, reducing people's will of contribution to the sponge city construction.

D. The Supervision and Management Is Still to Be Strengthened

In the development of sponge project, the governmental supervision is still imperfect for the project construction progress, ending of levy for key projects, quality and safety and civilized construction, Wuhan sponge city construction has passed the mid-term examination and acceptance of the Ministry of Housing and Urban-Rural Construction of the People's Republic of China, but the actual rate of some construction projects is not completely in conformity with the requirements of the Ministry of Housing and the Urban-Rural Construction, so the government leaders of the demonstration areas still should enhance the ending force of the project, and as the sponge project has entered a crucial period, all projects face a rigorous situation in the quality, safety and civilized construction of the project, and the management also faces enormous pressure.

E. The Public Participation Is Relatively Insufficient

In the program planning, plan formulation, project determination and specific implementation of Wuhan City sponge city construction, the publicity of information and citizen participation is not enough, and cannot fully reflect the public opinion. In the sponge reconstruction of the community area and roads, the investigation of public opinion on the project implementation is not enough, and the comprehensive arrangement is inadequate, resulting in serious traffic congestion in the city and affecting the normal public travel. Especially for the project of large construction scope, involving the overall demolition, residents often have their own different opinions, so as to cause a difficult implementation of the project. Citizens have no clear awareness of the significance of sponge city construction, the residents of the community, the units around and the roadside shops cannot provide active cooperation, so as to make the project not be developed orderly.

IV. THE SUGGESTIONS OF THE GOVERNMENT TO PROMOTE THE CONSTRUCTION OF SPONGE CITY

A. Improve the Relevant Laws and Policies

The sponge city construction in our country is still at the initial stage of exploration, and national and local laws and

regulations are relatively inadequate, most of which are the guidance and requirements issued by state ministries and local departments, with weak execution and coerciveness. In order to make an orderly construction of sponge city projects, we must continuously strengthen the leading role in policy. First, adjust the tax policy to encourage the participation in sponge city construction; reduce the related taxes of sponge city construction, such as reducing the tax rate of sponge facilities construction and transformation and reducing the taxes of PPP project companies.

B. Greatly Strengthen Technological Innovation

Strengthen the scientific research, pay attention to the introduction of talent, organize superior enterprises and research institutes to break through technological innovation, break through the traditional construction pattern, adopt new technologies and new ways according to the local conditions, to greatly solve the technical problems in the sponge city construction and to settle the technical problems in the implementation of current sponge city. Increase academic exchanges and technological innovation, strengthen the academic platform and the cooperation of research institutions and key enterprises with strong scientific research capacity. Speed up the technical research and cooperation of sponge city, and guide the high-level technicians and managers to join the sponge city construction.

C. Optimize the Channels of Investment and Financing

The government and enterprises make cooperation in the PPP mode that participate in public projects through introduction of social funds, which improves the quality of public goods and service levels, and reduces financial pressure and risk.^[4] Optimize the channels of investment and financing to encourage social capital to join the sponge city construction; the sponge city construction projects apply the PPP mode, of which social capital partners are financial investors and shareholders, who will be paid according to the agreed rate of return, and finally exit through the method of equity repurchase. The government should give the PPP project companies the related tax relief, policy encouragement and technical guidance, to promote the whole community to join into the sponge city construction. In order to speed up the work of non-government investment projects in each demonstration area, the sponge office of each demonstration area can promote the progress of non-government projects by inviting expert for guidance, setting up special promotion classes and intensifying propaganda.

D. Increase the Supervision and Management

The government of each demonstration area should grasp the progress of the work, give full play to their functions, make a comprehensive coordination, take the initiative action, clarify the node obstacles in the project progress and the key reasons, establish a sound responsibility mechanism, make clear the responsibility of project participants, strengthen the accountability in the project progress, and effectively ensure the steady and smooth progress of the project. Refine the finishing work of sponge project, enhance coordination and supervision for the list of responsibilities that have been

formed, further strengthen the supervision, greatly control and manage the quality and safety and civilized construction of sponge project. And effectively ensure the quality and safety and civilized construction of all projects.

E. Increase the Public Participation

To mobilize the whole community to participate in the sponge city construction, make these advanced ideas and specific requirements become a culture, thinking or habit through publicity, demonstration, promotion and other means, make it popular for people, so as to promote the construction of sponge city. ^[5]To make the public participate in all stages of the project, including project planning, plan formulation, project formulation and implementation, future maintenance, encourage the community to be devoted to the sponge city construction, to jointly build the sponge city satisfied by the people.

V. CONCLUSION

This paper, from the perspective of public management, studied the role of the government in the construction of sponge city, made analysis on the policy formulation, planning guidance, financial support, organization and coordination, management and supervision of the government in the construction of sponge city, in combination with the field research of the sponge city construction in Wuhan, found the problems such as imperfect policy and regulations, inadequate technological innovation, difficult introduction of social capital, incomplete supervision and management, insufficient public participation, and further put forward the countermeasures and suggestions to improve the relevant legal policy, greatly strengthen the technological innovation, optimize the financing channels, increase the supervision and management and enhance the public participation.

REFERENCES

- [1] Wu Yegang. The Design of Sponge City: Concept, Technology, Case [M]. Jiangsu: Phoenix Science and Technology Press, 2016: 4.
- [2] Zhang Jianyun, Wang Yintang. Discussion on the Problems of Sponge City Construction [J]. Progress in Water Sciences, 2016, 27 (6): 797.
- [3] Qiu Baoxing. The Connotation, Way and Prospect of Sponge City (LID) [J]. Arcjotectire Technology, 2015 (1): 11.
- [4] Geng Xiao, Zhao Yang, Che Wu. Thinking about the PPP Mode of in Sponge City Construction [J]. Urban Development Research, 2017,24 (1): 1.
- [5] Ju Maosen. Reflections on the Concept, Technology and Policy of Sponge City Construction [J]. Water Resources Development Research, 2015, 15 (3): 10.