Some Thoughts on the Establishment of Water-saving Society at County Level in Haining City

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Abstract. Since Haining was listed in the first batch of counties in Zhejiang Province to build water-saving society up to the national standards, water-saving work has been carried out in all directions and from many angles, and remarkable results have been achieved. During the construction of water-saving society at County level, a series of measures such as strengthening organization and leadership, improving water resources management system, increasing investment and expanding propaganda have achieved remarkable results in water resources protection and conservation, and successfully passed the acceptance of the first batch of national water-saving society at county level organized by Zhejiang Water Resources Department. Through summing up experience, it can provide reference for the construction of water-saving society in similar areas.

1. Background

The construction of water-saving society is a long-term strategic task of the state and a fundamental way to solve the problem of water resources in China. The Nineteenth National Congress of the Communist Party of China put forward the strategic decision to implement the national water-saving action, taking water-saving and emission reduction as an important measure to promote the optimization of economic structure and the construction of ecological civilization[1] [2] [3]. Implementing the water-saving policy of "giving priority to water-saving, balancing space, systematically managing and exerting both hands" and building a water-saving society in an all-round way have become an important task of water-control work in the new period in China. Haining City belongs to the water shortage area of resource type and water quality type. The contradiction between supply and demand is prominent. Hence, Haining City launched water-saving social construction work in 2013 and passed provincial acceptance check and acceptance at the end of 2015. It has achieved great results in four aspects: organizational guarantee, system construction, demonstration project construction and water-saving carrier construction.

In 2017, Zhejiang Provincial Water Conservation Office of Zhejiang Provincial Water Conservancy Department issued a notice on the implementation plan of water-saving society construction at county level in Zhejiang Province (2018-2022). In 2018, Haining will meet the water-saving society evaluation criteria promulgated by the Ministry of Water Conservancy (trial implementation) and the water-saving society evaluation criteria promulgated by Zhejiang Provincial Water Conservancy Department (trial implementation). "To this end, Haining municipal governments at all levels and relevant departments attach great importance to the evaluation criteria and carry out a series of complementary board work. By the end of 2018, it passed the first batch of national and
county water-saving society construction acceptance standards organized by Zhejiang Water Conservancy Department.

2. Current Situation of Water Saving in Haining City

2.1. Water Resources in Haining City
Haining is located in the north of Zhejiang Province, the North Bank of Qiantang River, east of Shanghai, west of Hangzhou, is one of the five counties and cities in Jiaxing City. With a total area of 862.74 square kilometers, the city has eight towns, four streets and three provincial development zones under its jurisdiction, with a permanent population of 843.6 million, with a GDP of 86.607 billion yuan in 2017. Haining has a dense river network and developed water system, involving the Qiantang River, Canal and Shangtang River. There are 2469 river channels with 1932 kilometers, and the water surface rate is about 7.5%. The average annual total water resources in Haining is 384 million cubic meters, and the per capita water resources occupancy is 460 cubic meters, which is about a quarter of the per capita water resources in the whole province. With the development of Haining's economy and society and the advancement of the construction of water ecological civilization, the dual crises of resource-based and water-quality water shortage restrict the sustainable development. Therefore, carrying out the national water-saving action and striving for a national water-saving society is the practical action to implement the idea of "water-saving priority", and it is also the inevitable requirement to deepen the "five-water co-governance", promote water-saving and water-conservation of the whole society and build "two-America" Haining.

2.2. Problems Existing in the Establishment of Water-saving Society at County Level in Haining City
With the development of economy and society, the requirement of the whole society for the construction of water-saving society has been further raised. According to the requirements of the provincial Party Committee and the provincial government on the construction of water-saving society and the implementation of the strictest water resources management system, the criteria for the evaluation of water-saving society at the county level in Zhejiang Province promulgated by the Ministry of Water Resources and the provincial water resources department have been compared[4][5]. There is still a certain gap between Haining and the construction requirements of water-saving society. The main problems are that the management system needs to be improved, the management system needs to be standardized, the implementation of water-saving projects is slow, and the water level needs to be further improved.

3. Some Thoughts on the Establishment of Water-saving Society at County Level in Haining City
On the basis of solid foundation of previous work, Haining learned advanced experience from other provinces[6][7][8], and the whole society worked together to build a water-saving society for one year. At the end of 2018, Haining passed the acceptance of the first batch of national water-saving society at county level organized by Zhejiang Water Resources Department. Therefore, summing up experience can provide reference for the construction of water-saving society in similar areas.

3.1. Leaders attach importance to it and organize it in an orderly way.
Haining City has set up the Water Conservation Office of Haining City, the Leading Group for the Construction of Water-saving Society of Haining City, the Leading Group for the Strictest Water Resources Management System of Haining City, and the Leading Group for the Establishment of Water-saving City of Haining City. The division of responsibilities of each member unit has been clarified, and a good situation has been formed in which each unit performs its duties and jointly manages, which has played an active role in promoting water-saving work in Haining City.
3.2. The plan should be carried out first and strictly.
In order to promote the establishment of national water-saving society in Haining City, the Haining Water Conservancy Bureau entrusted Zhejiang Institute of Hydraulics and Estuary to compile the Implementation Plan for the Construction of National Water-saving Society in Haining City in 2018. At the beginning of the compilation of the Plan, the Office of the Leading Group of Water-saving Society Construction in Haining convened all member units to sort out the standards one by one and found the shortcomings. In the self-assessment stage, the member units report the required materials to the office of the leading group at the first time and work together to complete the tasks.

3.3. There are rules to follow to improve the system.
1. In terms of water-saving and water-management planning, successively issued the "Opinions of the People's Government of Haining City on Implementing the Strictest Water Resources Management System to Promote the Construction of Water-saving Society in an All-round Way" and "Work Program for the Construction of Water-saving Society in Haining City", "Implementation Program for the Establishment of National Water-saving Society in Haining City in 2018" and "Water-saving Society Construction Program in Haining City in 2018-2022". and "Haining City Water Conservation Plan" and "Haining City Water Conservation City Implementation Plan" and other planning programs.

2. In terms of improving policy and system, successively promulgated the "Implementation Plan of Water Price Reform in Haining City", "Management Measures for Self-provided Water Supply in Haining City", "Comprehensive Evaluation of Yield Benefit of Haining Mu" and "Management Measures for Implementing Differential Water Price and Increasing Price of Over-planned Water for Category C Enterprises", "Specific Regulation of Water Use Behavior (Long-term Management)," and "Strengthening Secondary Water Supply in High-rise Residential Buildings". Opinions on the Implementation of Management, Measures for the Management of Urban Water Supply in Haining, Measures for the Management of Urban Water Conservation in Haining, Detailed Rules for the Approval and Assessment of the Water Use Plan in Haining, Plan of Action for the Prevention and Control of Water Pollution in Haining, Measures for the Protection and Management of Ecological Wetlands for Drinking Water Sources, and Awards for Promoting the Strictest Water Resources Management and Water Saving in Haining A series of normative documents and management systems on water conservation, water resources management, water supply, drainage, drinking water sources and water use management, such as the Measures, have provided strong policy and institutional guarantee for deepening national water-saving action and building a water-saving society in an all-round way.

3.4. Series creation, improve the effectiveness.
1. In the aspect of water-saving project construction, Haining has carried out construction work in the aspects of living water-saving, reclaimed water utilization, metering and monitoring, etc. New reconstruction projects of urban and rural water supply networks have been carried out, and the leakage rate of water supply networks has been decreasing year by year. In 2017, the leakage rate of urban water supply networks was 5.21%; the popularization rate of water-saving devices has reached more than 100% through the implementation of "one household, one meter" modification and replacement of water-saving devices; the scale of reclaimed water utilization in Jianshan Sewage Treatment Plant has reached 20,000 tons per day, continuously supplying water for river environment and some enterprises, and again. Zero breakthroughs have been achieved in the utilization of raw water; the construction of water metering facilities for agriculture and industry has been strengthened, and the metering rate of irrigation water has been increased year by year[9]. At present, it has exceeded 60%, and the metering rate of industrial water has reached 100%.

2. In the way of "all-round initiation, key promotion, demonstration and guidance", priority should be given to large water users to strengthen key guidance, guide them to improve water-saving management system, popularize water-saving knowledge, use water-saving instruments and promote recycling water use, so as to improve water use efficiency. In recent years, Haining has taken the lead
in establishing water-saving enterprises (units) by the office of the leading group of the city water-saving society, the Municipal Economic and Credit Bureau, the Municipal Authority, the Municipal Housing and Construction Bureau and the Municipal Water Conservancy Bureau. A total of 5 water-saving irrigation districts have been built in the city; 28 water-saving enterprises have been established (including 10 provincial enterprises), 172 water-saving public institutions (units), 12 water-saving residential districts, 2 provincial water-saving hospitals, 9 water-saving schools, 1 water-saving Hotel and 1 water-saving publicity and education base have been established. Through the construction of water-saving carriers, Haining City has completed the task of creating, established a number of water-saving models, with strong water-saving demonstration effect, to point-to-face, effectively promote the water-saving work in Haining City.

3. Promotion of heavy water-saving appliances and utilization of reclaimed water. In accordance with the requirements of popularization of water-saving appliances, the activities of water-saving appliances entering the community, water-saving knowledge entering the campus and water-saving technology entering the enterprise are organized and carried out. In accordance with the standard requirements of water-saving appliances, backward water-consuming products and technologies are strictly eliminated, and the popularization and application of water-saving products and technologies are strengthened. According to the statistical survey of 290 enterprises, units and residential districts in the city, 143 of them involve 1019,000 water-saving appliances, and 147 of them adopt water-saving appliances. At the same time, we should actively explore the reuse of reclaimed water. Jianshan Sewage Treatment Plant Reclaimed Water Reuse Project is the first Municipal Reclaimed Water Reuse Project in Jiaxing City. It was completed and put into operation from September to December 2015 with a scale of 20,000 tons per day.

3.5. Extensive publicity and awareness-raising.

Saving water needs the participation of the whole society. Haining extensively carries out the propaganda activities of "Six Entries", combines the propaganda of important nodes with the propaganda of normalization, publicizes the importance of creating a water-saving society, publicizes relevant laws, regulations and policies, so as to make the whole society fully aware of the water environment, establish new water-saving concepts, condense the consensus of water-saving, and strive to create a social atmosphere of cherishing, saving and protecting water.

1. Pay attention to the promotion of nodes. Centering on the annual "World Water Day", "China Water Week", "National Water Conservation Publicity Week" and other water-saving publicity activities, highlighting publicity themes, formulating publicity plans, and through multi-form, multi-level and omni-directional publicity activities, such as street centralized consultation, information dissemination, Erwei Erxin platform, LED screen, TV, radio, newspaper publicity and knowledge contest. Efforts should be made to raise the awareness of water saving and water conservation in the whole society.

2. Focus on daily publicity. In conjunction with the "five-water co-governance", water conservancy construction, flood control and drought relief, water administration law enforcement, investigation and disposal of typical water cases and post-event supervision, water-saving propaganda is carried out simultaneously. In the series of work of establishing water-saving carriers, implementing planned water management and water-saving propaganda bases, attention is paid to integrating water-saving propaganda into water control work and daily life, and overall planning and organization are strengthened to do a good job of propaganda. The article makes the general public have a deeper understanding of water-saving work, so that it can penetrate into the hearts of the people, enhance awareness and recognition, and guide the citizens to develop water-loving, water-saving and water-cherishing behavior.

3.6. Explore innovation, long-term management.

Haining Municipal Government Improves Water Saving Award Policy Mechanisms. On the basis of rewarding industrial enterprises for water-saving technology transformation and reclaimed water reuse
in Haining City in 2013, the "Haining City Promoting the Strictest Award Measures for Water Resources Management and Water-saving Work (Trial Implementation)" was promulgated in 2017. This method mainly covers water-saving enterprises (units), water-saving service units (hotels, hotels), water-saving residential quarters and water-saving irrigation districts to financial rewards or naming. Among them, the provincial water-saving enterprises (units) are awarded 50,000 yuan per family; the water-saving enterprises (units) in Jiaxing and Haining are awarded 30,000 yuan per family; and the water-saving service units (hotels, hotels, private hospitals, etc.) are awarded 20,000 yuan per family. At the same time, based on the completion of the most stringent key tasks of water resources management in the year, the units and individuals who have made remarkable achievements in the promotion of water-saving technology, water-saving emission reduction, water resources conservation protection and management are commended in order to fully mobilize the enthusiasm of the whole society for water-saving.

4. Conclusion and suggestions.
1. Reclaimed water reuse used to stay in the northern water-deficient areas, but seldom practiced in the southern water-rich areas. Reclaimed water reuse in South China is mainly concentrated in enterprises and residential areas. Although there are a large number of reclaimed water reuse, the scale is small and the total amount is small. Haining is the first Municipal Reclaimed Water Reuse Project in Jiaxing City. The scale of the project is 20,000 tons per day. Among them, the industrial water is 0.3 million tons per day, the municipal miscellaneous water is 0.7 million tons per day, and the landscape environment water is 10,000 tons per day. In 2017, the utilization rate of reclaimed water in Jianshan Sewage Treatment Plant was 30.8%, which was higher than the target utilization rate of reclaimed water exceeding 15%. However, due to the lack of reclaimed water reuse project in Haining Salt Tank Sewage Treatment Plant and Haining Dingqiao Sewage Treatment Plant, the overall utilization rate of reclaimed water in Haining City is less than 10%. Next step is to further increase the utilization of reclaimed water in Haining Salt Tank Sewage Treatment Plant and Haining Dingqiao Sewage Treatment Plant.
2. We will further increase the construction of efficient and water-saving irrigation projects. At present, the efficiency of water-saving irrigation in Haining City is 21.1%, which is lower than the requirement of assessment target. The next step is to intensify the construction of sprinkler irrigation, microtubule irrigation and drip irrigation projects in combination with the comprehensive reform of agricultural water price, and implement them step by step so as to achieve the target of high-efficiency and water-saving irrigation rate at an early date.
3. Water-saving society construction is not a stage work, but a long-term work. Although Haining City has passed the first batch of national and county water-saving society construction acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check and acceptance check, there are This requires all levels of departments in Haining City not to relax. In view of the shortcomings of the evaluation opinions, we should do a good job of "making up the shortcomings" so that the construction of water-saving society can continue.

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