

Construction of System Framework of the Most Stringent Water Resources Management Regime

Ju-ling Qiao and Fang Liu

Abstract Innovation of water resources management regime is an inevitable choice for economic and social development. It would be beneficial to sustainable development of the harmonious society between human and water as well as to sustainable utilization of water resources if the connotation of the new-type water resources management regime could be defined, the institutional system be established, realization approaches to be discussed, and the limited water resources could be used to the full extent both in development of economy and society and in virtuous cycle of ecological environment.

Keywords Realization approach • The most stringent management regime • Water resources

1 Introduction

Water scarcity has already become the key bottleneck restricting economic and social development, and meanwhile, water resources will turn to be badly needed. People of our times are faced with a significant and urgent topic, i.e. how to develop and use water resources to meet human needs while water resources could be managed and protected for sustainable utilization. This requires us to summarize and analyze successful water resources management experiences in

J. Qiao (✉)

School of Management, University of Jinan, Jinan, People's Republic of China
e-mail: Qiao58@126.com

F. Liu

The Huai River Basin Water Authority in Shandong Province, Jinan, People's Republic of China

domestic and overseas practical explorations, to discuss a new type of water resources management system, so that the harmonious coexistence between human and water could be finally achieved.

2 Connotation and System of the Most Stringent Water Resources Management Regime

2.1 The Concept of Water Resources Management

As for the concept of water resources management, although this term has been extensively applied, up to now, there has been no uniform and normative explanation in the academic world. Water resources management is defined in “Wikipedia-English” as follows: “water resources management refers to organization, coordination, supervision and scheduling of development and utilization of water resources; through administrative, legal, economic, technical and educational approaches, all kinds of social powers are organized for water conservancy development and of control water disaster; social and economic development is coordinated with development and utilization of water resources, while conflicts in water utilization is handled among each region or each social department; inappropriate development and harms of water resources are monitored and restricted; the scheduling program for optimization of water system and reservoir engineering is established for scientific allocation of water” [1]. Water resources management has a wide coverage in broad sense, thereby all tasks for water conservancy being carried out in nowadays could completely incorporated into water resources management. At present, a relatively universal definition for water resources management is that: the departments of water administration manage the development, utilization, scheduling, allocation, conservation and protection of water resources through legal, administrative, economic and technical means etc., which is the general term for all kinds of engineering and non-engineering measures meeting needs for human survival and living, social and economic development, as well as maintenance and improvement of ecological environment [2].

2.2 The Connotation of the Most Stringent Water Resources Management Regime

In 2011, a new type of water resources management regime was clearly put forward in the No.1 Central Documents and in the Central Water Conservancy Working Conference, which was also the ever strict ever regime on water resources management, being positioned as the “strategic move for speeding up transforming

ways of economic development”. It was not only a remarkable breakthrough in the history of water resources management, but also an innovation in water resources management regime, symbolizing a new leap in our knowledge in the law of water control and even of sustainable development. The most strict regime has already become the core for modern water conservancy management regime, whose connotation could be summarized as “establishment of three red lines and four regimes”, i.e. through establishment of the red line for controlling of water development and utilization, the control regime for water utilization volume could then be set up; through establishment of the red line for water utilization efficiency, the control system regime for water utilization efficiency could be set up; through establishment of the red line for total quantity of pollutant discharge into rivers and lakes, the regime for restricting permissible pollutants in water function zones could be set up; through establishment of the regime of management responsibility and appraisal, the institutional system for water resources management could be supported and improved.

2.3 The System of the Most Stringent Water Resources Management Regime

The general framework of the most stringent water management system is composed of six major systems, i.e. water conservancy engineering system, control indicator system, supervision and administration system, scientific monitoring system, indicator assessment system and management organization system.

2.3.1 Water Conservancy Engineering System

As the supporting foundation for implementation of the most strict water resources management regime, it is composed of water source engineering, water network engineering and water supply engineering, etc. Without perfect matching water conservancy facilities for water storage, diversion and transfer, the most strict water resources management regime would lose its root. Through water source engineering, natural precipitation could be dammed up and underground water be exploited out, so that natural water sources are turned into potential water resources available for human beings; through water network engineering, river and lake water systems in different basins and in different areas could be connected, so that the potential water resources are transferred and allocated to each region; through water supply engineering, water could ultimately be supplied to each industry and each family, so that the potential water resources are truly converted for direct utilization [3].

2.3.2 Control Indicator System

It contains three control indicators respectively for total water consumption, water use efficiency and water function zone restriction, which could be seen as the criteria measuring execution of a set of regimes. Establishment and improvement of a systematic and complete control indicator system is the basic premise for implementation of the most strict water resources management regime, which should be broken down and put into practice in response to control indicators for total water consumption, water use efficiency and water function zone restriction, etc. (i.e. known as the “three red lines”). The “three red lines” constitute an organic integrity with internal logistics under mutual support and correlation, fully representing the philosophy that equal attention should be paid to allocation, conservation and protection. Meanwhile, we have established the management mechanism for water resources development and protection warning, and have successively created, printed and distributed the “three warning lines” for available water supply for key water conservancy projects, ground water level of key underground water sources and pollutant carrying capacity of key water function zones [4].

2.3.3 Supervision and Administration System

It includes maintaining a strict standard respectively on certification and permission, water utilization planning and metering and charging. Enhancement of supervision and administration of water taking and utilization could be regarded as the most important handle for our water conservancy departments when they are striving to put the most strict water resources management regime into practice. Only if this handle is firmly held, could water consumption of a region be really controlled and could the most strict water resources management regime be really implemented. This can be seen as one of the functions best representing administrative authority of our water conservancy departments. In terms of specific assignments, there are “three gateways” requiring strict control [5].

2.3.4 Scientific Monitoring System

It contains the monitoring system for regional total water consumption, real-time monitoring system of key water users and the water quality monitoring system of water function zones. As for the most strict water resources management regime, approval of each control indicators as well as monitoring and appraisal of regime implementation require huge amount of monitoring data as support. Therefore, to speed up constructing and improving a scientific and complete monitoring system turns to be an important foundation for implementation of the most strict water resources management regime [6]. Starting with the actual demand in implementation of the most strict water resources management regime, the present situation urgently requires construction and improvement of monitoring systems for these three aspects.

2.3.5 Indicator Assessment System

It involves assessment of total regional water consumption, control indicator for water efficiency and control indicator for pollutant carrying limit. A key link in implementation of the most strict water resources management regime lies in that to establish the assessment system of control indicators, compare the monitored actual regional water consumption with control indicators stated in the “three red lines”, make assessment with scientific and object method, point out achievements and problems and finally acquire reasonable assessment conclusion and opinions [7]. Such assessment aims at formulating reasonable control indicators for regional water consumption in the next year or in the zone under planning, as well as providing important reference for appraisal of each level of local governments and relevant departments. Such assessment mainly focuses on total regional water consumption, water efficiency and pollutant carrying control of water function zones, and relevant procedures include reliability analysis of original monitored data, data verification and comparison, error analysis, comparison of actual monitored data and control indicators, reason analysis, comments and suggestions, etc. The institution for assessment could be the assessment specialist group established by water administrative authority or a consulting agency, and the assessment conclusion should be timely released to the public [8].

2.3.6 Management Organization System

This system includes formation of a centralized and unified water resources management regime, a coordinated management system and a professional service system in water resources management. A healthy and complete water resources management organization plays the role of effective support to efficient functioning of the most strict water resources management regime. During implementation of such as regime, only if a reasonable and effective management regime, management system and service system come into being, could we see the effect of the most strict water resources management regime.

3 Realization Approach of the Most Stringent Water Resources Management Regime

It is completely a new task as well as a long-term and tough mission to implement the new-type water resources management regime, i.e. the most strict water resources management regime. The promotion process is surely to be filled with difficulties and challenges, upon which we should be fully prepare to develop the spirit of conquering hardships and bold for tough battles. We should explore and innovate bravely, while going ahead steadily and surely for practicality and efficiency. To guarantee effective implementation of the most strict water resources management regime, the following three aspects should be emphasized.

3.1 Enhance Publicity, to Improve Awareness of the Whole Society

Implementation of the most strict water resources management regime involves all walks of life and all fields and running through each level such as the nation, region and user, etc., requiring joint efforts of the whole society for support and promotion. Therefore, it is necessary to further enhance direction of public opinions through all kinds of channels, vigorously develop publicity and education of the most strict water resources management regime and deepen awareness and acknowledgement of the whole society of such a regime. First, education of water regimen should be strengthened. It should be incorporated into national education system and educational program for primary and middle schools as well as training courses against leading cadres at each level and civil servants. Compilation and printing of relevant teaching materials should be well controlled. The government shall plan jointly with educational departments for construction of practice bases for water conservation education, to promote water regimen education into school, classroom, community and family. Second, promotion and guidance of public opinions should be enhanced. Popularization of water regimen should be strengthened. Water conservancy should be incorporated into public welfare publicity, to improve the whole society's consciousness of water crisis, water conservation and water resource protection, so that water cherishing, conservation and protection will become conscious action of all citizens and become an important criteria measuring civilization degree of the whole society, resulting in the healthy social atmosphere in which "honor to saving water, shame to wasting water". Third, guidance of demonstration by example should be well managed. The motivation mechanism encouraging advanced workers and first to excellence. Demonstration county (city/district) establishment for standardization construction of the most strict water resources management regime should be organized and developed in which counties (city/district) working ahead and creating experience would be nominated to be honored, so as to stimulate overall promotion of implementation of the most strict water resources management regime [9]. On the basis that construction of national/provincial demonstration city/county for the water conserving society is well controlled, selection, nomination and commendation of water-conserving demonstration county/town, district and unit should be organized and developed, so as to guide construction of the water-conserving society onto the path of continuous deepening promotion.

3.2 Strengthen Appraisal, to Improve Attention of leaders at Each Level

Appraisal is divided into three levels: first, to strengthen appraisal of implementation of the "three red lines". Control indicators of the "three red lines" i.e. total water consumption, water efficiency and water function zones restriction,

should be incorporated into comprehensive performance appraisal system of local scientific development, which is under responsibility of local administrative leaders. Effect of water conservancy reform and development including implementation of the most strict water resources management regime should be incorporated into comprehensive appraisal system of annual scientific development of each region, the weight of which would be obviously improved. Water conservancy reform effect of each region should be appraised by water administrative authorities altogether with related departments, and the appraisal result would be submitted to the authorities of leaders, which then becomes important content measuring scientific development of a region, as well as significant basis for comprehensive appraisal and evaluation of relevant local leaders and cadres. Any performance breaking through the “three red lines” could be vetoed by one vote. For situations that control of total water consumption is not strict enough, licensing approval of water taking is administratively interfered, or severe problems occur in water supply, relevant leaders and responsible people would be strictly called to account. Second, to strengthen internal appraisal of the system. According to detailed implementation measures for supervision and appraisal of water conservancy missions with annual significance, implementation of the most strict water resources management regime is considered as the content of weight, which accounts for 20 points in the overall a 100 mark appraisal system. Each water administrative authority should also strengthen appraisal and evaluation of implementation of counties (district/city) within jurisdiction. Third, to strengthen the appraisal of water users. Water consumption planning and management should be strictly implemented upon water users. The appraisal and incentive mechanism for water efficiency should be established, water efficiency indicators being incorporated into statistical indicators of enterprise business benefits.

3.3 Strengthen Law Enforcement, to Improve Acceptance Degree of People Subject to Administration

Implementation of the most strict water resources management regime is mandatory in a lot of aspects, which belongs to the scope of rigid management. Without powerful supervision upon law enforcement as a significant guaranty, this regime would be impossible to be really put into practice. So we should start from water management according to law. Firstly, we should strengthen management of water resources. While further improving legal system construction in water resource management, the greatest importance in water administrative enforcement should be attached to supervision of water consumption behaviors. We shall enhance construction of the professional water administrative team, equip it with stronger legal enforcement power, intensify fund guaranty and improve level of legal enforcement equipment, so as to build a water conservancy enforcement team from the bottom to top, being qualified as “highly disciplined, well equipped, with regulated enforcement

and quick response". We shall seriously put the water-drawing permit system into practice, and strictly follow the approval and execution of duties regulated in the "Regulation on the Administration of the License for Water Drawing and the Levy of Water Resource Fees" issued by the State Council. As for any examination and approval beyond authority, the duty of supervision and administration would be strictly performed, which would be corrected or revoked according to law, and relevant departments and staff would be strictly accounted. Secondly, we should innovate the law enforcement mechanism in water resource management. Water resource management involves multiple social aspects and departments; thereby we shall be good at sailing a boat by water and sailing by wind in integrating social law enforcement resources. A frequent work connection and coordination mechanism should be built up with departments such as public security, court, governmental legislation, land, construction and environmental protection, etc., aiming at acquiring their powerful support and cooperation to create joint efforts in water governance and administration according to law. We should continue to powerfully promote water policing system. With integration of local realities, construction of joint water and public security enforcement institutions e.g. water police station and water security office, etc. should be accelerated [10]. Thirdly, we should strictly regulate law enforcement behaviors. To define responsibilities of law executors should be the first mission. Water administrative executors at each level could only perform within their scope of their duties and functions, thus any actions beyond the scope would be considered invalid. During enforcement process of water resource assessment and examination, water-drawing permit approval, and levy of water resource fees, etc., water administrative authorities at each level should have clear sense of responsibility and implement their own duties in real earnest.

Acknowledgment A scientific research project on public welfare industries specially funded by the Ministry of Water Resources of the People's Republic of China (No. 201201114).

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