《我国水安全战略和相关重大政策研究》参考

2017 年第 1 期（总第 1 期）

中国工程科技知识中心水利专业分中心
中国水利水电科学研究院水资源研究所

2017 年 6 月 5 日

【政策法规】

1. 关于印发《国家环境保护“十三五”科技发展规划纲要》的通知

类型：指导文件，产业政策，规划文件

发文单位：环保部、科技部

颁布时间：2016-11-09

链接：http://www.h2o-china.com/policy/5991.html

2. 国务院印发《“十三五”节能减排综合工作方案》（全文）

类型：指导文件

发文单位： 国务院

颁布时间：2016-12-20

链接：http://www.h2o-china.com/policy/6008.html

3. 上海市水资源保护利用和防汛“十三五”规划

类型： 地方条例

发文单位：上海市人民政府办公厅

颁布时间：2017-01-03

链接：http://www.h2o-china.com/law/739.html

4. 节水型社会建设“十三五”规划

类型：指导文件，产业政策，规划文件

发文单位：国家发改委、水利部、住建部

颁布时间：2017-01-17

链接：http://www.h2o-china.com/policy/6013.html

5. 住房城乡建设部村镇建设司 2017 年工作要点

类型：规划文件

发文单位：住建部

颁布时间：2017-02-14

链接：http://www.h2o-china.com/policy/6022.html

6. 《全国农村环境综合整治“十三五”规划》印发实施

类型：指导文件，规划文件

发文单位：环保部

颁布时间：2017-02-23

链接：http://www.h2o-china.com/policy/6031.html

7. 2017 年农业面源污染防治攻坚战重点工作安排

类型：指导文件

发文单位：农业部

颁布时间：2017-02-24

链接：http://www.h2o-china.com/policy/6042.html

8. 河南省节水型社会建设“十三五”规划

类型：规划文件

发文单位：河南省发改委、省水利厅、省住建厅

颁布时间：2017-03-06

链接：http://www.h2o-china.com/policy/6037.html

9. 《山西省水污染防治 2017 年行动计划》

类型：指导文件，

发文单位：山西省人民政府

颁布时间：2017-04-14

链接：http://www.h2o-china.com/policy/6051.html

10. 《北京市水污染防治技术目录》

类型：产业政策，技术政策

发文单位：北京市科学技术委员会、北京市水务局

颁布时间：2017-04-19

链接：http://www.h2o-china.com/policy/6054.html

11. 关于印发《循环发展引领行动》的通知

类型：指导文件

发文单位：国家发改委

颁布时间：2017-04-21

链接：http://www.h2o-china.com/policy/6053.html

12. 《“十三五”环境领域科技创新专项规划》

类型：指导文件

发文单位： 科技部、环保部、住建部、国家林业局、国家气象局

颁布时间：2017-04-27

链接：http://www.h2o-china.com/policy/6064.html

13. 昆明市海绵城市规划建设管理办法

类型： 指导文件，规划文件

发文单位：昆明市人民政府

颁布时间：2017-04-27

链接：http://www.h2o-china.com/policy/6065.html

14. 水污染防治法（修订草案）（征求意见稿）

类型：国家法律

发文单位：环保部

颁布时间：2017-05-22

链接：http://www.h2o-china.com/law/711.html

【标准规范】

15.《循环经济发展评价指标体系（2017 年版）》

类型：相关标准，

发文单位：国家发改委、财政部、环保部、国家统计局，

颁布时间：2017-01-01；

链接：http://www.h2o-china.com/standard/1311.html

16. 国家环境保护标准制修订工作管理办法

类型：相关标准，

发文单位：环保部，

颁布时间：2017-05-22.

链接：http://www.h2o-china.com/standard/1316.html

【动态信息】

1. 中国科学院地学部院士咨询项目“‘一带一路’发展中国家水安全战略启动”（2017 年 2 月 28 日）

【科学网】2017 年 2 月 27 日消息，由中国科学院地学部常务委员会批准设立的“‘一带一路’发展中国家水安全战略研究”咨询项目正式在京启动。项目由中科院院士夏军担任项目组组长，并牵头邀请相关院士和专家组成咨询项目组，将在为期一年的调研和研讨基础上，就“一带一路”发展中国家的水安全问题和建议形成咨询报告，为我国的“一带一路”战略布局和决策提供参考。该项目重点探讨两方面的核心问题：（一）水安全问题对“一带一路”发展中国家的社会

经济影响与制约何在？如何应对？（二）“一带一路”发展中国家水安全问题对中国“一带一路”战略的影响与关键性制约何在？如何应对？该咨询项目将服务于“一带一路”战略面临的日趋严峻的全球水安全问题，同时希望为第三世界科学院（TWAS）水科学研究计划与水安全战略建议提供基础咨询意见。

链接：http://news.sciencenet.cn/htmlnews/2017/2/368977.shtm

2. 2017 年“世界水日”主题

【三联网】2017 年 3 月 21 日消息，2017 年 3 月 22 日是第二十五届“世界水日”，3 月 22-28 日是第三十届“中国水周”。联合国确定 2017 年“世界水日”的宣传主题是“Wastewater”(废水)。我国纪念 2017 年“世界水日”和“中国水周”活动的宣传主题为“落实绿色发展理念，全面推行河长制”。

链接：http://www.3lian.com/cha/2017/03/223870.html

3. 2017 年第四届中国（国际）水生态安全战略论坛（2017 年 4 月）

【景观之路】2017 年 4 月 13 日，第四届中国（国际）水生态安全战略论坛于湖南长沙拉开序幕。王浩院士率先进行了以《水生态安全战略》为题的演讲；刘昌明院士以《基于 LID 城市水生态维护若干问题讨论》为题从中国的城市化发展与趋势、城市化主要生态与环境问题与博弈、海绵城市建设的正确方向与若干误区，以及关于建设海绵城市的研究的若干科技问题等方面进行了论述；蒋玮董事长从《水环境产业可持续发展探讨》入手，分析了水环境当下面临的压力与机遇，提出通过市场机制驱动、适度开发、服务模式优化等方式实现可持续发展，并以静港湿地为例，以具体数据为据，说明设计实践带来的生态、经济、社会效益；唐少华处长分享了《流域一盘棋、共治一江水——湖南省湘江保护与治理》；李迪华副院长从景观设计的角度出发，阐述了《海绵城市建设落地的景观设计》。

链接：https://693803.kuaizhan.com/71/37/p424708677522a2

【文献速递】

1. Linking knowledge with action in the pursuit of sustainable water-resources management（知识与行动结合，追求可持续的水资源管理）

作 者 ： Jacobs, Katharine,Lebel, Louis,Buizer, James,Addams, Lee,Matson, Pamela,McCullough, Ellen,Garden, Po,Saliba, George,Finan, Timothy,

文献源：*Proceedings of the National Academy of Sciences of the United States of America*，2016，vol.113

摘要：Managing water for sustainable use and economic development is both a technical and a governance challenge in which knowledge production and sharing play a central role. This article evaluates and compares the role of participatory governance and scientific information in decision-making in four basins in Brazil, Mexico, Thailand, and the United States. Water management institutions in each of the basins have evolved during the last 10-20 years from a relatively centralized water-management structure at the state or national level to a decision structure that involves engaging water users within the basins and the development of participatory processes. This change is consistent with global trends in which states increasingly are expected to gain public acceptance for larger water projects and policy changes. In each case, expanded citizen engagement in identifying options and in decision-making processes has resulted in more complexity but also has expanded the culture of integrated learning. International funding for water infrastructure has been linked to requirements for participatory management processes, but, ironically, this study finds that participatory processes appear to work better in the context of decisions that are short-term and easily adjusted, such as water-allocation decisions, and do not work so well for longer-term, high-stakes decisions regarding infrastructure. A second important observation is that the costs of capacity building to allow meaningful stakeholder engagement in water-management decision processes are not widely recognized. Failure to appreciate the associated costs and complexities may contribute to the lack of successful engagement of citizens in decisions regarding infrastructure.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=5568dd9cd570cc6fb494b4224ae81403

2. Impacts of urbanisation on hydrological and water quality dynamics, and urban water management: a review（城市化对水文水质动态和城市水管理的影响综述）

作者：McGrane, Scott J.,

文献源：*Hydrological sciences journal*，2016，vol.61

摘要：As urban space continues to expand to accommodate a growing global population, there remains a real need to quantify and qualify the impacts of urban space on natural processes. The expansion of global urban areas has resulted in marked alterations to natural processes, environmental quality and natural resource consumption. The urban landscape influences infiltration and evapotranspiration, complicating our capacity to quantify their dynamics across a heterogeneous landscape at contrasting scales. Impervious surfaces exacerbate runoff processes, whereas runoff from pervious areas remains uncertain owing to variable infiltration dynamics. Increasingly, the link between the natural hydrological cycle and engineered water cycle has been made, realising the contributions from leaky infrastructure to recharge and runoff rates. Urban landscapes are host to a suite of contaminants that impact on water quality, where novel contaminants continue to pose new challenges to monitoring and treatment regimes. This review seeks to assess the major advances and remaining challenges that remain within the growing field of urban hydrology.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=5a272c5a8d28775282885c5d2c52c055

3. Placing ecosystem services at the heart of urban water systems management（将生态系统服务作为城市水系统管理的核心）

作者：Garcia, X.,Barcelo, D.,Comas, J.,Corominas, Ll.,Hadjimichael, A.,Page, T. J.,Acuna, V.,

文献源：*Science of the Total Environment*，2016，vol.563/564

摘要：Current approaches have failed to deliver a truly integrated management of the different elements of the urban water system, such as freshwater ecosystems, drinking water treatment plants, distribution networks, sewer systems and wastewater treatment plants. Because he different parts of urban water have not been well integrated, poor decisions have been made for society in general, leading to the misuse of water resources, the degradation of freshwater ecosystems and increased overall treatment costs. Some attempts to solve environmental issues have adopted the ecosystem services concept in a more integrated approach, however this has rarely strayed far away from pure policy, and has made little impact in on-the-ground operational matters. Here, we present an improved decision-making framework to integrate the management of urban water systems. This framework uses the ecosystem service concept in a practical way to make a better use of both financial and water resources, while continuing to preserve the environment.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=62ff0ee832245a35b246cb1d6e1ceffd

4. Complex water management in modern agriculture: Trends in the water-energy-food nexus over the High Plains Aquifer （现代农业水管理中：高平原含水层水-能源-食物关系的发展趋势）

作者：Smidt, Samuel J.,Haacker, Erin M. K.,Kendall, Anthony D.,Deines, Jillian M.,Pei, Lisi,Cotterman, Kayla A.,Li, Haoyang,Liu, Xiao,Basso, Bruno, Hyndman, David W.,

文献源：*Science of the Total Environment*，2016，vol.566/567

摘要：In modern agriculture, the interplay between complex physical, agricultural, and socioeconomic water use drivers must be fully understood to successfully manage water supplies on extended timescales. This is particularly evident across large portions of the High Plains Aquifer where groundwater levels have declined at unsustainable rates despite improvements in both the efficiency of water use and water productivity in agricultural practices. Improved technology and land use practices have not mitigated groundwater level declines, thus water management strategies must adapt accordingly or risk further resource loss. In this study, we analyze the water-energy-food nexus over the High Plains Aquifer as a framework to isolate the major drivers that have shaped the history, and will direct the future, of water use in modern agriculture. Based on this analysis, we conclude that future water management strategies can benefit from: (1) prioritizing farmer profit to encourage decision-making that aligns with strategic objectives, (2) management of water as both an input into the water-energy-food nexus and a key incentive for farmers, (3) adaptive frameworks that allow for short-term objectives within long-term goals, (4) innovative strategies that fit within restrictive political frameworks, (5) reduced production risks to aid farmer decision-making, and (6) increasing the political desire to conserve valuable water resources. This research sets the foundation to address water management as a function of complex decision-making trends linked to the water-energy-food nexus. Water management strategy recommendations are made based on the objective of balancing farmer profit and conserving water resources to ensure future agricultural production.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=a1407d528b51d3778e90de4855053e69

5. Desalination leaders in the global market - current trends and future perspectives（全球市场海水淡化领先者：目前趋势与未来展望）

作者：Ziolkowska, Jadwiga R.,

文献源：*Water science & technology: Water supply*，2016，vol.16

摘要：Since the world's first land-based desalination plant was established in Australia in 1903, brackish groundwater and seawater desalination became a common water supply technology in many countries around the world. Desalination has proven as a reliable technology in times of drought and/or water scarcity, while in some countries it is an indispensable water supply source on a regular basis. This paper compares and evaluates major desalination leaders in the world (USA, Saudi Arabia, Israel, Australia, and China) with the aim of pointing out similarities and differences that made each of them successful. It also depicts a comprehensive picture of developments, trends and experiences in desalination at the global scale. Establishing desalination plants and ensuring their successful operation is a complex and multifaceted process dependent on capital and operational costs, production capacity, water salinity, geographical location, socio-economic and environmental conditions, and many other factors. The country specific comparison presented in this paper emphasizes the importance of regional planning for successful and sustainable desalination processes in the long term.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=78e58377a72c29187464c85ef55d5b6b

6. Climate change impact on water resources availability: case study of the Llobregat River basin (Spain)（气候变化对水资源可利用性的影响：以西班牙 Llobregat 流域为例）

作者：Versini, P. -A.,Pouget, L.,McEnnis, S.,Custodio, E.,Escaler, I.,

文献源：*Hydrological sciences journal*，2016，vol.61

摘要：Climate change may have significant consequences for water resources availability and management at the basin scale. This is particularly true for areas already suffering from water stress, such as the Mediterranean area. This work focused on studying these impacts in the Llobregat basin supplying the Barcelona region. Several climate projections, adapted to the spatiotemporal resolution of the study, were combined with a daily hydrological model to estimate future water availability. Depending on the scenario and the time period, different assessment indicators such as reliability and resilience showed a future decrease in water resources (up to 40%), with drought periods becoming more frequent. An additional uncertainty analysis showed the high variability of the results (annual water availability ranging from 147 hm(3)/year to 274 hm(3)/year), thus making accurate projections difficult. Finally, the study illustrates how climate change could be taken into account to provide adaptive measures for the future.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=7674f35b0f13039a4eb8ce0fdf8850cb

7. Environmental aspects and potential impacts of proposed water transfer scheme on sustainable water management in eastern Herzegovina（调水对 Herzegovina 东部可持续水管理的环境与潜在影响）

作者：Ilic, Marina Cokorilo,Stevanovic, Zoran,Vakanjac, Vesna Ristic,

文献源：*Environmental earth sciences*，2016，vol.75

摘要：East Herzegovina is characterized by substantial water resources and abundant precipitation from October to May each year. As a result, the karst poljes of east Herzegovina are experiencing major, long-lasting floods during the rainy period and, conversely, insufficient recharge to the aquifer systems and rivers in the summer, often causing streams to completely dry out. Consequently, the karst poljes, which are the largest arable lands in the area, are rendered virtually useless during most of the year. To address this issue, the idea was born to build multi-purpose systems-the Trebis. njica Hydropower Scheme-in the so-called Lower Horizons and Upper Horizons, the primary and ultimate goal being the management of water resources in the area. The Lower Horizons scheme, which encompasses hydraulic structures, surface reservoirs, hydroelectric power plants, irrigation systems and drinking water supply facilities, was largely completed in the 1970s. The outstanding Upper Horizons project calls for comprehensive development of the water regime, including water resources management, social, environmental and energy components, as well as the transfer of water from the Neretva River Basin to the Trebis. njica River Basin (still under evaluation). Namely, interbasin transfer would reduce the discharges of the Neretva's left tributaries: the Buna, the Bunica and the Bregava, but must not threaten minimal natural flows. The hydraulic model and preliminary environmental impact assessment indicate that there will be no significant adverse impacts; however, continuous monitoring of the effects during both construction and operation is mandatory.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=354696f5bc28f921db904feff946061e

8. Analysis of the sources of financing for water management in the Polish economy（波兰经济中水管理资金的来源分析）

作者：Bien, Ewa,Wojcik-Mazur, Agnieszka,

文献源：*Desalination and water treatment: Science and engineering*，2016，vol.57

摘要：Environmental protection expenditures stimulate the investment process in each area of environmental protection including water management. Thus, the pace and scope of these investments is dependent on the level of expenditures incurred by both commercial and public sectors, including local government units. In this paper, a

comparative analysis of expenditures of the EU countries in Poland in relation to GDP has been presented. A completed study showed some significant differences between various countries; however, some similarities have been seen within the so-called old and new EU members. With regard to new members, some significant progression of the environmental expenditure in relation to GDP has been noticed while in the case of the so-called old countries the relationship remained relatively constant. At the same time, it has been proved in structure analysis that the analyzed amount of expenditures is not determined by the level of development of individual countries. Moreover, higher dynamics of incurred expenses in the New Union compared to countries belonging to the so-called Old Union has been diagnosed. Against this background, the structure of sources regarding financing Poland's water economy has been assessed indicating that the debt including in particular funds mainly from the EU, environmental funds and the state budget are an important source of financing. It should be emphasized that funds obtained from the EU in the period 2005-2010 increased significantly. That increase resulted in reconverting the structure of financing the capital expenditure on fixed assets in water management, whereas in the years 2010-2011, the highest proportion of funds accounted for the funds mainly provided by the EU. Despite a decline in new investments undertaken in the years 2011-2012, it still remains the main source of funding. The regression of investment in water management in the years 2011-2012 occurring especially in business enterprises and municipalities should be a matter of concern.

链接：
http://www.nstl.gov.cn/NSTL/facade/search/toFullView.do?checkedSEQNO=473354be085e626fe0871083b217eb8b

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