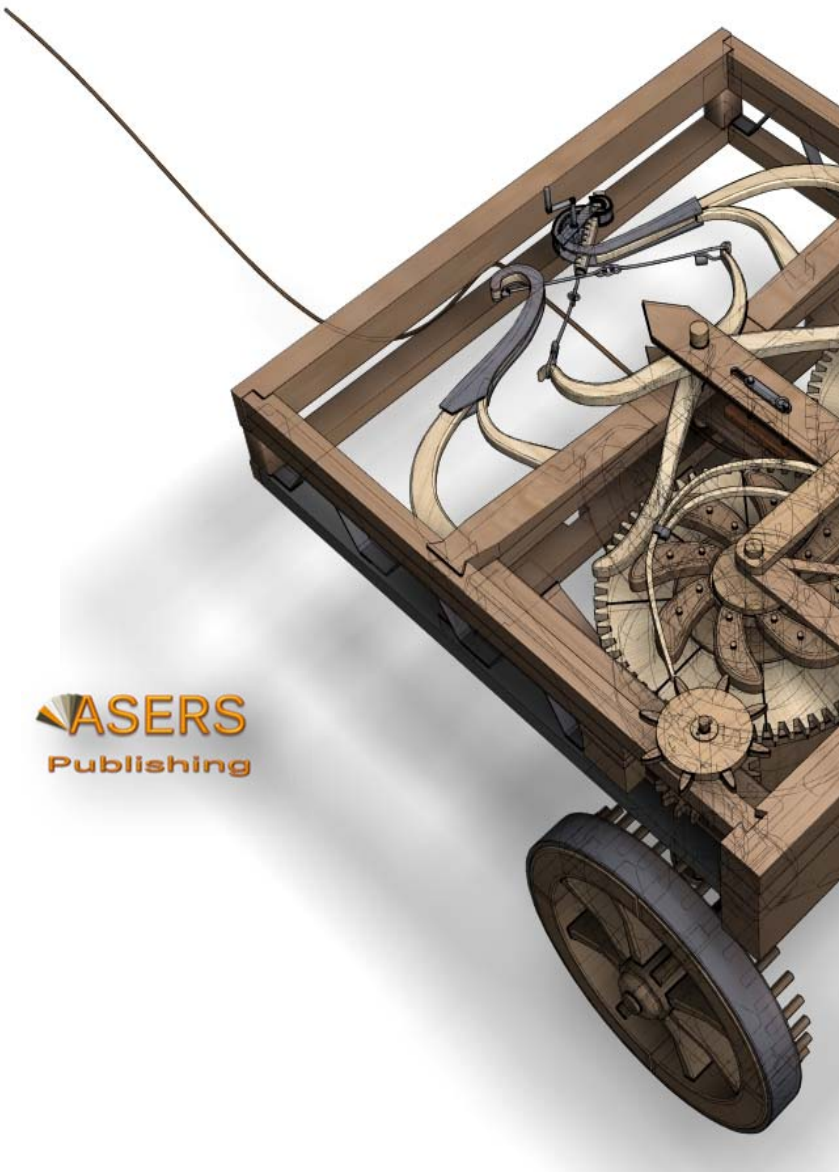
ASERS

Journal of Environmental Management and Tourism



Quarterly
Volume XI
Issue 3(43)
Summer 2020
ISSN 2068 – 7729
Journal DOI
https://doi.org/10.14505/jemt

ASERS Publishing

Summer 2020
Volume XI
Issue 3(43)

ASERS Publishing
http://www.asers.eu/asers-publishing
ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt

Table of Contents:

Summer 2020
Volume XI
Issue 3(43)

ASERS Publishing
http://www.asers.eu/asers-publishing
ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt

Call for Papers
Fall Issues 2020
Journal of Environmental Management and Tourism

Journal of Environmental Management and Tourism is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

Journal will publish original research and seeks to cover a wide range of topics regarding environmental management and engineering, environmental management and health, environmental chemistry, environmental protection technologies (water, air, soil), pollution reduction at source and waste minimization, energy and environment, modeling, simulation and optimization for environmental protection; environmental biotechnology, environmental education and sustainable development, environmental strategies and policies, etc. This topic may include the fields indicated above, but are not limited to these.

Authors are encouraged to submit high quality, original works that discuss the latest developments in environmental management research and application with the certain scope to share experiences and research findings and to stimulate more ideas and useful insights regarding current best-practices and future directions in environmental management.

Journal of Environmental Management and Tourism is indexed in SCOPUS, RePEC, CEEOL, ProQuest, EBSCO and Cabell Directory databases.

All the papers will be first considered by the Editors for general relevance, originality and significance. If accepted for review, papers will then be subject to double blind peer review.

Deadline for submission:	31st August 2020
Expected publication date:	September 2020
Website:	https://journals.aserspublishing.eu/jemt
E-mail:	jemt@aserspublishing.eu

To prepare your paper for submission, please see full author guidelines in the following file: JEMT_Full_Paper_Template.docx, then send it via email at jemt@aserspublishing.eu.

DOI: https://doi.org/10.14505/jemt.11.3(43).20

Improving Public Water Resources Policy in Ukraine: Municipal and Environmental Issues

Oleg A. DIEGTIAR
O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine
odegtyar@i.ua

Volodymyr H. HORNYK
Educational and Research Institute of Management, Economy and Ecology
V.I. Vernadsky Taurida National University, Ukraine
btstkach@gmail.com

Sergii O. KRAVCHENKO
Educational and Research Institute of Management, Economy and Ecology
V.I. Vernadsky Taurida National University, Ukraine
sergnika@mail.com

Valentyna V. KARLOVA
National Academy for Public Administration under the President of Ukraine, Ukraine
kvv_2017@ukr.net

Tatyana V. SHTAL
Simon Kuznets Kharkiv National University of Economics, Ukraine
shtaltv@gmail.com

Suggested Citation:

Diegtiar, O.A., *et al.* (2020). Improving Public Water Resources Policy in Ukraine: Municipal and Environmental Issues. *Journal of Environmental Management and Tourism*, (Volume XI, Summer), 3(43): 669 - 675. DOI:10.14505/jemt.v11.3(43).20

Article's History:

Received 18th of March 2020; Received in revised form 26th of April 2020; Accepted 21th of May 2020; Published 22nd of June 2020.

Abstract:

The article focuses on the current topic of public water resources management. Globalization presents new challenges and demands for sustainable development for society. The current problem of modern humanity is the rational use of limited water resources. Water management is closely linked to the harmonization of social, economic and environmental requirements. The domestic water use system cannot meet European requirements for effective water supply due to moral and physical wear. An inadequate regulatory framework reduces the effectiveness of management processes and requires finding ways to attract investment to the industry, including in public-private cooperation. The analysis of the main problems of water management development, including non-compliance with European standards, moral and physical wear, lack of effective systems of water resources planning, monitoring and control of use of water resources, showed that these problems are primarily the result of an imperfect system of public water management. Based on commercialization processes, the water supply system through the implementation of public-private partnership mechanisms, provided that private entities are clearly monitored by public authorities, can produce significant socio-economic and environmental results. The research developed an algorithm for implementing an effective water management system at the state level by developing and implementing public-private partnership projects in accordance with the requirements of an effective water management system. The mathematical model of information and analytical support of processes of monitoring of rational water use in conditions of implementation of public-private partnership projects is defined.

Keywords: mechanisms of public administration; water management; public policy; rational water use; control.

JEL Classification: Q25; Q28.

Introduction

One of the urgent issues of the global development of society today is the provision of water resources. The United Nations, among the seventeen main objectives of sustainable human development aimed at ensuring that future generations can operate at the same quality level as previous generations, defines the goals of clean drinking water, monitoring the quality of drinking water, ensuring environmental attitudes to the use of natural waters and effective waste water treatment (Kryvonos *et al.* 2017; Akbayeva *et al.* 2019). So, the issue of water management has a global importance and greater relevance to the life support of future generations (Pinto *et al.* 2018; Rosa *et al.* 2018; Dias *et al.* 2018; Silva *et al.* 2018; Costa *et al.* 2018; Moura *et al.* 2018; Lessa *et al.* 2018; Dovidauskas *et al.* 2018).

The water use issue also has a considerable relevance in Ukraine. Significant amounts of water are used not only for the household needs of the population, but also for maintaining operations processes of industry, agriculture and other sectors of the national economy of the country. Thus, an important aspect of the development of public administration programs in the field of water management is to take into account the characteristics of this industry in its dual importance: the provision of drinking water and water for the domestic needs of the population; and providing water to the operational processes of other sectors of the national economy. Water management affects the development of other sectors of the economy and the placement of productive forces. An important issue of public administration is the redistribution and protection of water resources due to their shortage and unequal placement throughout the territory of Ukraine. For example, a large industrialized city like Kharkov does not have large supplies of drinking water and water to ensure the operation of industrial facilities. However, the city is provided with 24-hour water supply for the needs of the population and maintenance of industrial facilities and housing and communal services.

Thus, the relevant issue is to identify ways of ensuring an effective system of improvement of the state policy for the development of water resources for the organization of rational water use and the provision of water resource requirements for the population and sectors of the national economy. Because of the relevance of the problem of research, the works of many scientists are devoted to this topic, including Vyshnevskyi, Stashuk, and Sakevych (2011). However, due to the development of technology and the implementation of decentralization reform in Ukraine, the relevance of the problem of ensuring public water management is subject to further research.

The purpose of the study is to find ways to improve the effectiveness of public policies to use the potential of water management in order to rationalize water use processes and to meet the needs of the population and economic actors of water resources of appropriate quality.

In order to achieve this goal, a number of objectives have been put forward and developed in the study:

- to analyze the domestic system of state regulation of water management,
- to identify the main problems of water management development,
- to analyze the water-resource potential of the regions of Ukraine,
- to declare requirements for the construction of an effective water management system,
- to develop an algorithm for the implementation of an effective water management system at the state level through the development and implementation of public-private partnership projects,
- to define a mathematical model of information and analytical support of processes of monitoring of rational water use in conditions of implementation of public-private partnership projects.

1. Features of the Existing National Water Management System

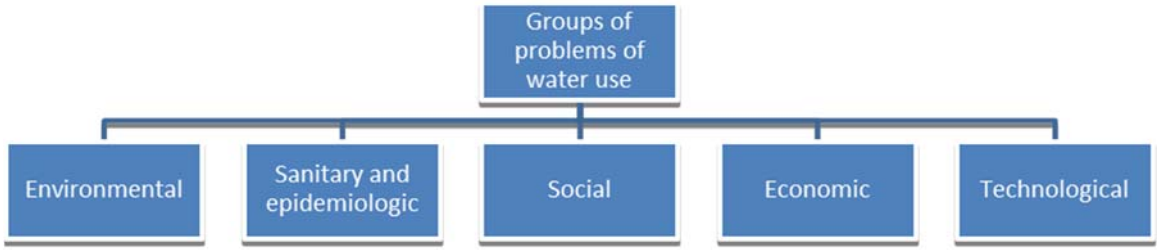
Water economy is a complex of national economy, which covers processes of assessment, use, management and control of water resources in processes of economic systems maintenance. Key concepts that are important for the construction of the system of state water management are the interaction of water users, water management enterprises (taking into account the high technological efficiency of hydraulic structures and systems), ecologists and management and control bodies of technical, technological and socio-economic processes (Vishnevsky *et al.* 2011). Today the National System of State Management of the Water Complex has a number of key problems that slow down its further development and bringing it to the norms and standards of the European Community, as follows:

- inconsistency of institutional influence of state policy on development of water complex due to uncertainty of rights, powers and obligations for implementing the state policy in this direction among central authorities, representatives of local self-government and other organizations and departments;
- unsustainable management of the water complex;
- lack of clear rules, standards and regulations for water management and protection of water resources;
- non-compliance of domestic standards with water quality standards, sanitary norms and water use rules and purification of water used in the European Union, which reduces competitive advantages of domestic producers in world markets (Ryabets 2010; Antonyuk 2011).

Thus, these problems require reform of the system of state policy of water management development at the national level in order to ensure standards and requirements of water management of EU countries and to ensure competitive advantage of domestic enterprises. Every year 15.7 billion cubic meters of water are spent on the needs of the national

economy of Ukraine. After the use of water resources in the form of wastewater, almost 8.5 billion cubic meters of the polluted waters are discharged into water bodies. Only 6 billion cubic meters are being purified in whole or in part. This situation has a negative impact on the environmental situation in the country and on the social indicators of living standards of the population and the use of clean drinking water (Sorokin *et al.* 2019). And the level of clean drinking water is constantly decreasing. While 50 years ago the population of Ukraine consumed water directly from water sources, today more than 850 thousand people buy drinking water, which is specially imported to settlements due to the lack of drinking water of proper quality, which meets sanitary standards. This problem tends to increase in scope and threatens to completely replace natural sources of water supply with the need to use imported water resources. It is also worth noting the danger of unsustainable use of waters in flood-hazardous flood-prone regions (Pavlov and Stashuk 2013; Danilishin *et al.* 1999). So, analyzing the main problems of development of the water complex of Ukraine, problematic aspects can be divided into the following blocks – Figure 1.

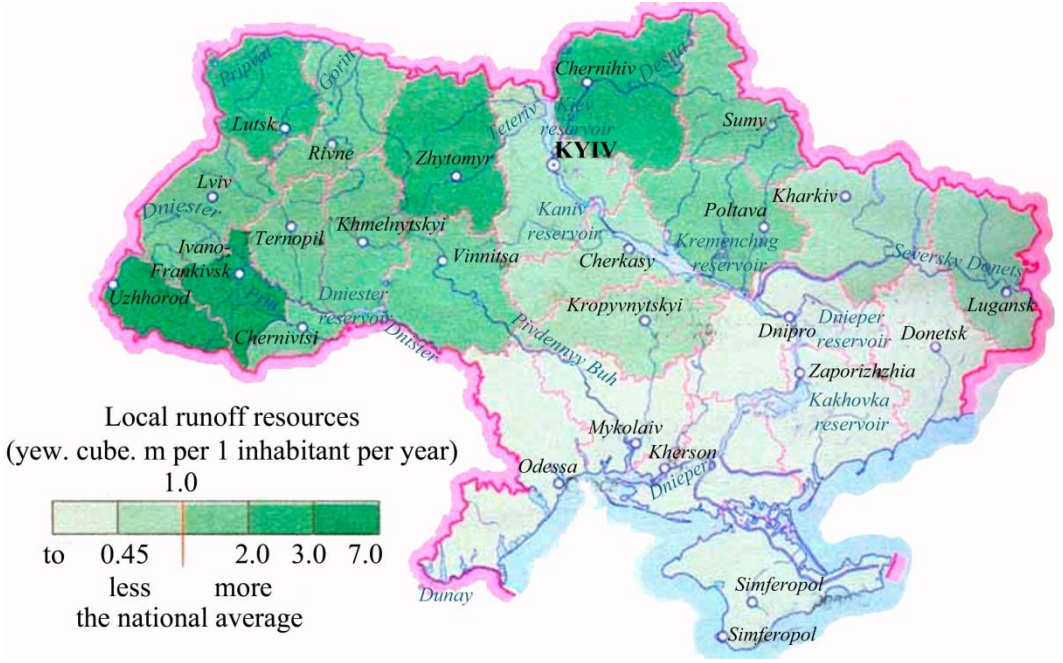
Figure 1. Groups of water use problems (compiled by the authors)



By describing the diagram in Figure 1, you can define the following. The main problems that arise in the case of inefficient state policies for water management are environmental ones. Environmental problems are related not only to the direct contamination of waters due to the rains of dirty drains back into water bodies, but also to the chain reaction of environmentally negative impact on the habitats of animals and birds, flora and fauna. Sanitary and epidemiological standards are intended to determine the possibility of using water to meet the domestic needs of the population, especially the provision of drinking water (Golyan 2009).

The water resources utilization system develops under the conditions of financing by residual principle. Substantial moral and physical deterioration of hydraulic equipment, sewage treatment systems and storm sewage, lack of clear and transparent procedures for standardization of wastewater quality, lack of monitoring of compliance with environmental standards for waste treatment by industrial and agricultural enterprises entering water systems, lead to significant environmental, social and economic problems (Petrosov 1999). The rationalization of economic systems for water efficiency is also a priority. It is useful to consider the possibilities of the state's influence on the rationalization of water management policies in regions. Water resources potential of Ukraine by regions is presented on the Figure 2.

Figure 2. Water resources potential of Ukraine by regions



Source: (Antonyuk 2011)

Analysis of water resources of Ukraine showed that the most resources of local runoff (from 3 to 7 thousand cubic meters per year per person) falls in such regions as Zakarpattia, Ivano-Frankivsk, Chernivtsi, Volyn, Zhytomyr. From 2 to 3 thousand cubic meters per year per person falls in a number of western regions: Lviv, Rivne, Ternopil, Chernivtsi, Khmelnytskyi; and the central part – Vinnytsia region, as well as Sumy and Poltava regions. Water supply can be identified as problematic in the following territories: Kyiv, Cherkasy, Kropyvnytskyi, Kharkiv, Luhansk regions. Southern regions of Mykolaiv, Kherson, Odesa have a low indicator of resources of local runoff. A particular problem with water supply, especially drinking water and water for melioration systems, has been observed in the Autonomous Republic of Crimea. After the annexation of Crimea, the supply of water to the peninsula by Ukraine was suspended. Eastern regions of Zaporizhia, Donetsk, Dnipropetrovsk have an indicator of resource flow of less than 0.45 thousand cubic meters per year per person, which is due to the unsustainable water use of industrial enterprises located on this territory and the decrease in the level of water quality for domestic use and drinking water, despite the placement on the territory of these regions of the largest water artery of Ukraine – the river Dnipro (Stashuk and Khorev 2014; Dobryanska 2016).

2. Analysis of the Necessary Mechanisms of State Policy in the Field of Water Resources Management

Analysing the uneven provision of water resources at the territory of the country, it is important to determine the possibilities of integrated water resources management on the principle of division of the territory into water basins. We will define the main tasks before the development of mechanisms to improve the effectiveness of public water policy, as follows:

- raising the level of satisfaction of the population's needs for domestic water and drinking water,
- rationalization of water use in various sectors of the national economy,
- ensuring ecological safety of water use processes,
- development and implementation of water resources remediation and conservation programmes,
- integration of the domestic system of regulatory support and standardization and certification of water use processes in accordance with European norms and standards (Vostrikova 2015; Levkovskaya and Mandzik 2016; Khvesik 2014).

In order to ensure an effective system of public water management, we propose to refer to the implementation of public-private partnership projects as one of the best world practices for the management of natural monopolies in the "state-private sector-public sphere" to ensure the investment and innovative development of the industry (Khvesik *et al.* 2008). Construction of the system of implementation of the state policy of water management complex management through mechanisms of public-private partnership can be built by implementation of the following algorithm:

1. Development, improvement and complementing existing legal and regulatory framework to regulate the mechanisms for the introduction of public-private partnership in the system of state policy for the development of the water sector of Ukraine on the example of the best world achievements (Kostruba 2019). First of all, the Water Code of Ukraine requires further development and updating (Kachan 2015).
2. Auditing of Ukraine's water resources with a view to developing integrated systems for complex management of water basins, taking into account socio-economic and environmental requirements (Kovalenko and Popov 2011).
3. Institutional restructuring of water management by moving from point management decisions to creation of water basin management (Kovalenko and Popov 2011).
4. Improvement of the planning system within the framework of water management functions, taking into account the needs of forecasting, operational, tactical and strategic planning of water complex development (Sazonets and Pokul 2015; Yakovlev *et al.* 2011).
5. Automation of water use monitoring and control processes by applying environmental safety norms and standards, water protection taking into account the social and economic needs of the population and the national economy (Yakovlev *et al.* 2011).
6. Development of personnel support of the water management system by means of public and private financial support of the system of training of vocational and technical personnel and specialists of the highest qualification to ensure effective maintenance and management of water systems, renewal of knowledge, abilities and skills by providing the system "education during life" (Stashuk 2006; Zablotskyi *et al.* 2019).
7. Implementation of control functions to ensure environmental safety and rationalization of water use processes in accordance with European norms and standards (Ivanova 2011).
8. Introduction of intellectual and innovative approach on application of the latest achievements of science and technology in operation of water management systems by modernization and technological re-equipping of industry through investments through projects of public-private partnership (Ivanova 2011).
9. Ensuring energy efficiency of water use (Khvesik 2014).
10. Provision of monitoring of water losses, accidents and damages on hydraulic structures in order to ensure quality, timely and economic water supply without losses during transportation (Khvesik 2014).
11. Provision of wastewater use systems, seawater desalination and other technologies to reduce drinking and freshwater consumption (Khvesik 2014).

12. Review and unification of specifications of water usage per person or unit of production according to norms and standards of the European Union (Shtogrin 2016).

13. The solution of problems of drinking water by development of artesian wells, application of systems of effective water purification, formation of approaches to the organization of life of the population considering requirements of rational water use, use of sources of underground waters (Shtogrin 2016).

14. Processes of centralization of water supply from water supply networks within the framework of development of remote territories in the system of unified territorial communities (Shtogrin 2016).

15. Prevention of technogenic water pollution, control of operation of hydraulic technical complexes in order to ensure water supply quality, environmental safety of environmental waters of zones and coastal lanes (Evdokimov and Zhuk 2015).

16. Development and implementation of automated system of information and analytical support of processes of state management of water complex (Khvesik 2014; Evdokimov and Zhuk 2015).

Now turn to the issue of developing an automated system of information and analytical support for the processes of state management of the water complex, as this system will contribute to the development of management processes and the realization of management functions of water management development at the state level.

The set of information and analytical ensuring of administrative processes of a system of water management is aimed at providing functions of monitoring and control of performance of planned targets on implementation of concepts of development of a system of water use. According to Evdokimov and Zhuk (2015), mathematically the model of information and analytical support of management processes of the water management system can be described using the formula:

$$У = Ғ (X) \quad (1)$$

where У – number of water leaks from systems,

X – number of analyzed objects

We will calculate the number of failures of water supply systems and headwaters for water management in Kharkiv. The calculation data is recorded in Table 1.

Table 1. Statistics on headwaters in the water economy of the city of Kharkiv

The considered district	Quantity of objects of water consumption	The centralized water supply	Headwaters	Expected indicator of headwaters	% of deviations from analyzed objects
Moscowskyi	107,077	20,540	4,143	4,500	-8.6
Osnovianskyi	21,266	8,260	1,941	1,965	-1.2
Nemyshlianskyi	47,094	31,042	6,249	6,552	-4.8
Industrialnyi	55,568	38,272	8,506	7,926	6.8
Total	456,727	179,389	32,286	32,316	-0.1

The value of the headwater number, calculated according to the table data, is

$$У = 0.537 X 0.91 \quad (2)$$

where $8260 \leq X \leq 18000$ according to the number of analyzed objects according to Table 1.

Therefore, it has been determined that the irrational use of water according to the calculated indicators given on the example of the city of over one million of Kharkiv, which has a low level of water supply, is up to 10%. When building the system of management of public-private partnership projects, the state should pay special attention to monitoring and control of water losses, which is an indicator of rational water use, and establish legislative norms on water resources loss up to 0.01 according to the conducted computation.

Conclusion

Thus, the research analysed the domestic water management system and state policies aimed at the rational use of water resources. The analysis showed a number of challenges, primarily related to imperfections of the domestic regulatory and legal system, mechanisms of standardization and processes of water management at the state level. It is useful to consider the possibilities of regulatory and legal regulation of mechanisms of public-private partnership in the water management system, which is an effective world practice. This concept was analyzed, the algorithm of its implementation and the model of mathematical justification of processes of monitoring and control of rational use of water resources were proposed.

Waterworks must be built with consideration of national planning of the processes of formation and functioning of water consumption infrastructures. It is necessary to factor in the ecological parameters that minimize environmental impact, given the social and economic results of economic activity. The paper contains a developed algorithm that will

contribute to the efficiency increase in the implementation of the national policy for managing the water industry through public-private partnership mechanisms. The mathematical model of information management and analysis for the waterworks administration allowed to determine that the irrational water consumption, according to the estimates, leads to a low level of water supply and amounts to a 10% reduction, evidence from Kharkiv.

References

[1] Akbayeva, L., *et al.* 2019. Ecotoxicological studies of Akmola region lakes. *Potravinarstvo Slovak Journal of Food Sciences,* 13(1): 25-31.

[2] Antonyuk, U.V. 1999. State legal mechanism of environmental protection in Ukraine and Poland: a comparative analysis. *University Research Notes,* 4(40): 201-206.

[3] Costa, E.P.D., *et al.* 2018. Temporal evolution of water quality in the Ampulha´s dam watershed between 2006 and 2016. *Periodico Tche Quimica,* 15(30): 102-114.

[4] Danilishin, B.M., Doroguntsov, S.I., and Mishchenko, V.S. 1999. *Natural Resource Potential of Sustainable Development of Ukraine.* RVPS of Ukraine.

[5] Dias, É.C., Silva, G.P.C.D., Almeida, I.R.D., and Fernandes, L.L. 2018. Proposal for sizing a water supply system for Algodoal district in Abaetetuba city – Pará. *Periodico Tche Quimica,* 15(30): 347-356.

[6] Dobryanska, T.I. 2016. *Mechanisms for Ensuring Sustainable Development of the Water Management Complex of Ukraine.* Institute for Environmental Economics and Sustainable Development of the National Academy of Sciences of Ukraine.

[7] Dovidauskas, S., *et al.* 2018. Approach on detection of situation of potential risk to health, related to water quality: an example. *Periodico Tche Quimica,* 15(29): 123-135.

[8] Evdokimov, V.A., and Zhuk, V.M. 2015. State regulation of water complex development through implementation of integrated water resources management approach by basin principle. *Actual Problems of Public Administration,* 1(47): 139-145.

[9] Golyan, V.A. 2009. *Institutional Environment of Water Use: Current State and Mechanisms of Improvement.* Tverdynya.

[10] Ivanova, T.V. 2011. *State Management of Sustainable Ecological Development of Ukraine and its Regions in the System of Rational Use of Nature: Theory, Methodology, Perspective Directions.* Yuho-Vostok.

[11] Kachan, N.S. 2015. *Assessment of Structural Adjustment in the Water Management Complex of Ukraine.* National University of Water Resources and Environmental Management.

[12] Khvesik, M.A. 2014. *Capitalization of Natural Resources.* State University of NAS of Ukraine

[13] Khvesik, M.A., Golyan, V.A., Yarotska, O.V., and Korzhunova, N.V. 2008. *Institutional Maintenance of Ecologically Balanced Water Use in Modern Conditions.* South-East, Ltd.

[14] Kostruba, A.V. 2019. The rule of law and its impact on socio-economic, environmental, gender and cultural issues. *Space and Culture, India,* 7(2): 1-2.

[15] Kovalenko, PI., and Popov, V.M. 2011. *Management of Water Distribution Systems on the Principles of Resource and Energy Saving.* Ahrarna nauka.

[16] Kryvonos, Y.G., *et al.* 2017. Independent devices and wireless sensor networks for agriculture and ecological monitoring. *Recent Advances in Information Technology* (pp. 105-134). London: CRC Press. DOI: 10.1201/9781351243179

[17] Lessa, L.C.P., *et al.* 2018. Regulation and award for mineral water in the state of Pará. *Periodico Tche Quimica,* 15(29): 156-163.

[18] Levkovskaya, L.V., and Mandzik, V.M. 2016. Financial and economic support of the project management of the territorial water-economic complex. *Collection of Scientific Works of the Bulletin of the KhNAU named after V.V. Dokuchaev. Economic Sciences Series,* 2: 323-335.

[19] Moura, R.R.D., *et al.* 2018. Monitoring of the environmental quality of surface waters in Thepinheiros River, RMSP, Brazil. *Periodico Tche Quimica,* 15(30): 294-304.

[20] Pavlov, V.I., and Stashuk, A.S. 2013. *Basin Water Management: Experience and Priorities.* NUVHP.

[21] Petrosov, V.A. 1999. *Management of Regional Water Supply Systems.* Osnova.

[22] Pinto, C.C., Almeida, K.D.B., and Oliveira, S.C. 2018. Spatial evaluation of the water quality from the Velhas river channel, in the state of Minas Gerais. *Periodico Tche Quimica,* 15(30): 75-86.

[23] Rosa, L.D.S., *et al.* 2018. Study on methods of determination of an ecological flow for the management of water resources of the river basin on Maracaçumé river. *Periodico Tche Quimica,* 15(30): 27-34.

[24] Ryabets, K.A. 2010. Administrative law in integration of integrated water resources management. In *Today Land, Agrarian, Environmental and Environmental Law: Actual Problems and Theory of Practice: Materials of the International Science-Practical Conference (*pp. 106-107). The Legislation Institute of the Verkhovna Rada of Ukraine.

[25] Sazonets, I.L., and Pokul, A. 2015. Basin management as an effective state method of ensuring rational use of water resources by Ukrainian enterprises. *Bulletin of Socio-Economic Research,* 3: 198-205.

[26] Shtogrin, G.S. 2016. Environmental problems of water use in the sphere of housing and communal services. In *Ecology and Nature Management in the System of Optimization of Relations between Nature and Society. Materials of the Third International Scientific and Practical Conference* (pp. 274-277). Krok.

[27] Silva, A.C.C.D., Souza, G.L.G.D., and Rocha, J.R.C.D. 2018. Spectrophotometric evaluation of the concentrations of the nitrate ion in water resources of paranaguá and Pontal do Paraná. *Periodico Tche Quimica,* 15(30): 201-209.

[28] Sorokin, A.E., Bulychev, S.N., and Gorbachev, S.I. 2019. Environmental impact of paints in high-tech production. *Russian Engineering Research,* 39(9): 816-819.

[29] Stashuk, V.A. 2006. *Ecological and Economic Bases of Basin Water Management.* Zorya.

[30] Stashuk, V.A., and Khorev, M.V. 2014. Changes in legislation regarding water management. *Water Management of Ukraine: Scientific-Production Journal,* 1(109): 26.

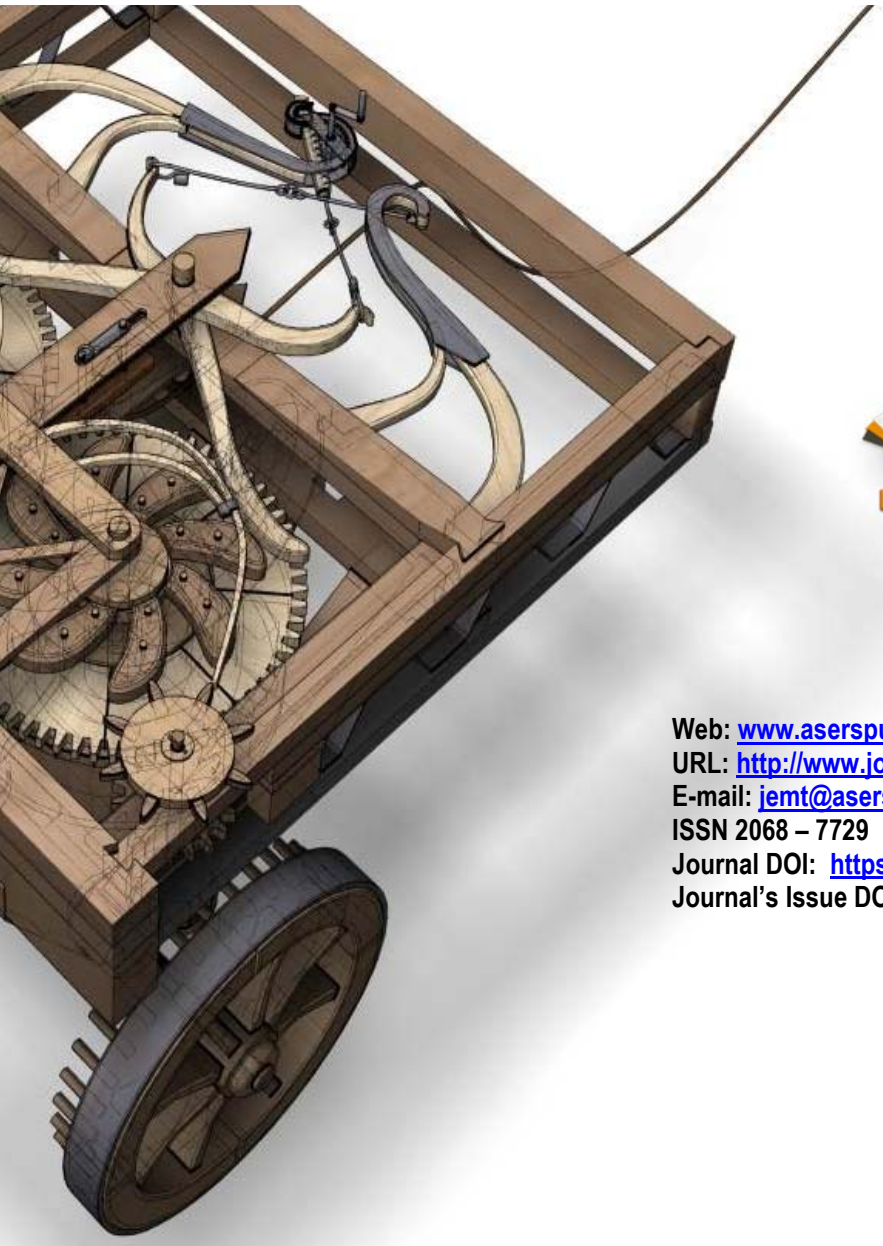
[31] Vishnevsky, B.I., Stashuk, V.A., and Sakevich, A.M. 2011. *The Water Management Complex in the Dnipro Basin.* Interpres, Ltd.

[32] Vostrikova, N.V. 2015. System model of the mechanism of state management of water resources. *Investment: Practice and Experience. Series: Public Administration,* 4: 143–148.

[33] Yakovlev, E.A., Skaletsky, Yu.M., Ivanyuta, S.P., and Yakushenko, L.M. 2011. *Assessment of Regional Ecological-Resource and Ecological-Technogenic Threats to the National Security of Ukraine*. NISD.

[34] Zablotskyi, V.V., *et al.* 2019. The current state and necessity of transformation of the management system of educational establishments in Ukraine at the local level. *Public Policy and Administration,* 18(2): 225-240.

ASERS



Web: www.aserspublishing.eu
URL: http://www.journals.aserspublishing.eu/jemt
E-mail: jemt@aserspublishing.eu
ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt
Journal's Issue DOI: https://doi.org/10.14505/jemt.v11.3(43).00