МЕНЕДЖМЕНТ

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WATER RESOURCES QUALITY CONSIDERING IN THE RATING AS A COMPONENT OF ECONOMIC STIMULATING ECOLOGIC POLICY OF INDUSTRIAL ENTERPRISES

Urgency of the research. *Today the formation of adequate tariffs for water use is controversial in the scientific debate.*

Target setting. *The state influence on the mechanism of rational nature resources use concentrates on the rating and tariffing as the main economic tools and we find the quality of water resources as the basic index of water resources condition in the aspect of this rating. Now we need to find out the best ways of the water resources qualitative index considering foreshortened the rating aspect.*

Actual scientific researches and issues analysis. *A number of well-known Ukrainian scientists Melnyk L. G., Karintseva O. I., Shevchenko S. M., Shapochka M. K., Bun E., Yatsyk A. V., Gryshchenko Y. M., Volkova L. A., Melnyk, L., Shevchuk V. A. conducted investigations on salient and emerging trends in water resources rating and their quality determination.*

Uninvestigated parts of general matters defining. The research objective. *Still this topic remains of the considerable importance as water resources rating faces a number of issues which have to be organized, investigated and resolved. This article describes how to establish main aspects of water conditions rating by identifying the trends of water resources use by the industrial enterprises.*

The statement of basic materials. *The article investigates a qualitative component of water resources in general water economic system of Ukraine, it's considering in the rating process and also the system of economic stimulating ecologic policy in the industrial sphere. The paper also describes the issues and explores how to solve the identified major problems.*

Conclusions. *Water resources quality considering is one of the key elements of rating as a component of economic stimulating ecologic policy of industrial enterprises. Water quality influences rating as the tariffs are formed by rental concept and also the concept of the charges partition between all the participants of the water consumption system. The price for industrial water consumption differences from basin to basin, so this is another proof of water quality considering (among other factors). The water quality considering must remain one of the main tools in tariffing and there must me new ways of water quality determination investigated.*

Keywords: *water resources; industrial enterprises; rating, tariffing.*

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ВРАХУВАННЯ ЯКОСТІ ВОДНИХ РЕСУРСІВ У ТАРИФОУТВОРЕННІ ЯК СКЛАДОВОЇ ЕКОНОМІЧНОГО СТИМУЛЮВАННЯ ЕКОЛОГІЧНОЇ ПОЛІТИКИ ПРОМИСЛОВИХ ПІДПРИЄМСТВ

Актуальність теми дослідження. *Сьогодні формування адекватних тарифів за використання водних ресурсів є дискусійним питанням у науковому диспуті.*

Постановка проблеми. *Державний вплив на механізм раціонального природокористування концентрується на тарифікації і тарифоутворенні як основних економічних інструментах, тому ми приймаємо якість водних ресурсів базовим індикатором умов водних ресурсів в аспекті такої тарифікації. Тепер нам потрібно винайти найкращі способи врахування якісних показників водних ресурсів стосовно аспекту тарифікації.*

Аналіз останніх досліджень і публікацій. *Відомі українські вчені Мельник Л. Г., Карінцева О. І., Шевченко С. М., Шапочка М. К., Бун Е., Яцик А. В., Грищенко Ю. М., Волкова Л. А.; Шевчук В. А, зробили великий вклад у оцінювання водних ресурсів та визначення їх якості.*

Виділення недосліджених частин загальної проблеми. Постановка завдання. *Процес оцінювання використання водних ресурсів є надто складним. Тому у даній роботі досліджено основні аспекти умов оцінювання водних ресурсів шляхом ідентифікації напрямків водокористування промисловими підприємствами.*

Виклад основного матеріалу. *У статті характеризується складова якості водних ресурсів у загальній водній економічній системі України, її врахування у процесі тарифоутворення, а також система економічного стимулювання екологічної політики у галузі промисловості. Описана проблематика і запропоновані методи вирішення основних проблем.*

Висновки. *Врахування якості водних ресурсів є одним з ключових елементів оцінювання складової економічного стимулювання екологічної політики промислових підприємств. Якість води впливає на оцінювання, оскільки тарифи формуються шляхом рентної концепції, а також концепції розподілу витрат між учасниками водогосподарської системи. Ціна за промислове водокористування відрізняється залежно від басейну. Врахування якості води повинне залишатися одним з основних інструментів у тарифікації, і мають бути винайдені нові шляхи дослідження та визначення якості води.*

Ключові слова: *водні ресурси; промислові підприємства; тарифоутворення; тарифікація.*

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МЕНЕДЖМЕНТ

Urgency of the research. The ecologization processes start with environmental protection activities which are the part of the mechanism of rational nature resources use. So it includes the maintenance of such tasks, as: restructuring of economy on the governmental level so further enterprises profile changes; replacement of the ecologically inauspicious technologic processes due to decreasing of the ecologically inauspicious production needs so using the resources-economy technologies (Melnyk, L. and others, 2005).

Target setting. The state influence on the mechanism of rational nature resources use concentrates on the rating and tariffing as the main economic tools and we find the quality of water resources as the basic index of water resources condition in the aspect of this rating. Now we need to find out the best ways of the water resources qualitative index considering foreshortened the rating aspect.

All those factors have determined the authors' choice of research relevance; moreover the noted issues have formed its idea, aim, and object.

Actual scientific researches and issues analysis. A number of well-known Ukrainian scientists Melnyk L. G., Karintseva O. I., Shevchenko S. M., Shapochka M. K., Bun E., Yatsyk A. V., Klymenko L. V. Gryshchenko Y. M., Volkova L. A. (Melnyk, L. and others, 2005; Yatsyk A. V. and others, 2000; Shevchuk V. A. and oth., 1996), as well as other researchers conducted investigations on salient and emerging trends in water resources rating and their quality determination. Still this topic remains of the considerable importance as water resources rating faces a number of issues which have to be organized, investigated and resolved

Uninvestigated parts of general matter defining. This article describes how to rate water resources and how to use this rating while creating and improving the system of rational water resources use in aspect of economic stimulating of nature saving policy in the industrial sphere.

The **research objective** is to establish main aspects of water conditions rating by identifying the trends of water resources use by the industrial enterprises.

The statement of basic materials. The mechanism of rational water resources use combines purpose-oriented or programmatic arrangements and also economic methods of water-protecting activities (Yatsyk A. V. and oth., 2000). The basis of this regulative mechanism is the concept of paid water consumption. So we come to the first one conclusion that water resources rating is one of the most important economic tools to influence the whole mechanism of nature resources use and particularly the water quality. We understand that both rating, tariffing and the quality of water resources are the components of the system which is the object of our investigation, but we need to find out the shortest ways about their interaction. The state influence touches industrial enterprises payments since the existence of the Ukrainian water use state system. As the temporary tariffs for water were introduced in 1994, the permanent tariffs in 1997, the industrial enterprises have been paying for water before that (Shevchuk V. A. and oth., 1996). To implement these tariffs the rental concept was used, and also the concept of the charges partition between all the participants of the water consumption system. The rental concept, developed by the scientists L. V. Kantorovych, G. M. Matlin, N. P. Fedorenko, T. S. Khachaturov (Yatsyk A. V. and oth., 2000), foresees the water resources estimation including the compensatory part and also its estimation accepting water as natural resource. This defines the economic effect the consumer receives while the process of water consumption (Shevchuk V. A. and oth., 1996). First of all the rental concept takes into consideration the deficiency of water as the natural resource on all the levels of water supply. The ecologic state of water determines its deficiency of vise versa its sufficiency. So in theory the concept of water estimation in part of the rental concept takes into consideration the water resources quality and this estimation in Ukraine is used to form tariffs for the water consumption. So we move further investigation on the way of the mechanism of paid water consumption.

Factually, the tax for water consumption rate is the summary of the tax for water consumption (as water is the natural resource), for creating the possible resources in the water supply system, and also the tax for the diversion capacity, water cleaning and its distribution between the water consumers of the separate water supply system (Melnyk L. G., 2003). Both these taxes consider the water quality as the first one depicts rental concept (and we came to the conclusion that this is the basis of the tariffing), while the second one considers water cleaning and this process directly depends on the

water quality. So the economic water estimation in part of water supply system functioning equals the current annual expenditures for the creating and protection of water resources. Taking into account water estimation in the system of water supply, we know that it consists of the water prime cost and normative profit (Shevchuk V. A. and others, 1996).

The legislative regulation fixed such components of the payed water consumption as: licenses, standards, tax procedure, tax rates and distribution of the payments (Melnyk L. G., 2003). The economic regulation of rational water resources use in ecological aspect contains such elements, as: limits for water resources use and limits for polluted substances surges into the water objects; tax rates for water resources use and limits for polluted substances surges into the water objects; temporary financial tax concessions for the enterprises which are providing ecologically safe technologies; and also compensation of damages in case of breach of ecologic order. So, the task of water consumption regulation comes to using of market mechanisms as a tool for intensification of the economic activities ecologization (Yatsyk A. V. and others, 2000).

To find out how the quality of water resources influences their rating, we can use the approach which considers the connection between the volumes of water resources taken for usage and the volumes of the definitive production and also the pollution at the end of the processes. On the other hand, such approach may be false while the international experience shows that there is no strong connection between increasing of the natural resources usage and the economic results (Dubas, R., 2007). But we may take just a part from this concept and concentrate on the connection between the general indexes of water resources use and the indexes of their pollution. So this connection reveals the dependence of water resources quality considering in rating.

To be more concrete in this question, we extend our investigation to the ways how water quality can be estimated.

Ecologic estimation of water quality means classifying waters due to the ecologic classification based on the analysis of index meanings of its structure and traits, these indexes counting and integration. This estimation gives information about water as a part of water system and is based on such ecologic classification which includes hydro physical, hydro chemical, hydro biological, bacteriological and other indexes which depict the peculiarities of biotic and abiotic components of water systems. The ecologic estimation of water quality includes three blocks of indexes: salty structure block, block of sanitary-ecologic indexes and block of indexes of specific toxic substances. The results combine the summary of indexes by all of these blocks (Yatsyk A. V., 2014).

The procedure of serious ecologic estimation of water quality consists of four consistent stages:

1. Grouping and processing of outgoing data.
2. Determination of classes and categories of water quality according to separate indexes.
3. Summarizing of water quality estimations according to separate indexes by different blocks with definition of integral indexes of classes and categories.
4. Determination of the united water quality estimation for each concrete water object in general or for its separate parts during the investigation time.

So the results depict:

1. General ecologic estimation of water resources quality.
2. Ecologic estimation of water resources quality by medium meanings by blocks' indexes.
3. Ecologic estimation of water resources quality by separate indexes.

This way of estimation is the most rational one while planning to use the simple valuation for water protecting activities, ecologic or ecological-economic division into districts, ecologic chart-making. So it for sure influences the procedure of water rating as industrial enterprises pay for water differentially basing on the basin principle.

Water tariffing depends on the water basin from which one or another enterprise is taking water, and also the purpose of water use. The price for industrial enterprises is higher and while it differences from basin to basin, we consider this fact one of the elements of water quality considering while rating.

For example, we draw attention to the tariffs for special water consumption which have been used until 2011.

Table 1

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Tax standards for special water resources use in part of surface water use actual till 2011

River basins	Tax standards (cop. Per cubical meter)
Dnipro to the north from Kyiv including Kyiv	10,08
Dnipro to the south from Kyiv without Ingulets	9,58
Ingulets	14,62
Siverskyi Donets	19,66
Pivdennyi Bug	11,08
Ingul	13,6
Dniester	6,04
Visla and Zakhidnyi Bug	6,04
Prut and Siret	4,54
Tysa	4,54
Dunai	4,04
Crimea rivers	20,16
Azov rivers	24,5
Other rivers	11,08

Source: Resolution about assertion of tax standards on the special water resources use (1999)

Now the special water consumption rates are regulated by the Tax Code (Tax code, 2010) where the part about special water consumption is in process of revision.

Conclusions. Water resources quality considering is one of the key elements of rating as a component of economic stimulating ecologic policy of industrial enterprises.

The conducted study leads to the following conclusions and recommendations:

1. The basis of the regulative mechanism of rational water resources use is the concept of paid water consumption. Here a water resource rating comes in the role of one of the most important economic tools to influence the water quality.
2. On the other hand, water quality influences rating as the tariffs are formed by rental concept and also the concept of the charges partition between all the participants of the water consumption system.
3. In this article we analyze the water consumption taxes elements and come to the conclusion that the water quality estimation influences price.
4. And also the price for industrial water consumption differences from basin to basin, so this is another proof of water quality considering (among other factors).
5. The water quality considering must remain one of the main tools in tariffing and there must me new ways of water quality determination investigated.

References

1. Dubas, R. (2007). *Ekonomika pryrodokorystuvannia [Environmental Economics].* Kyiv: Publishing House Small Enterprise "Lesia" [in Ukrainian].

2. Melnyk, L. G. (2003). *Ekolohichna ekonomika [Ecological economy].* Sumy: University book [in Ukrainian].

3. Melnyk, L. H., Karintseva, O. I., Shevchenko, S. M., Shapochka, M. K., Bun, E, Khents, L., Perelot, R., et al. (2005). *Osnovy staloho rozvytku [Basics of Sustainable Development].* Sumy: Vydavnytstvo Torhovyy dim "Universytetska knyha" [in Ukrainian].

4. Rezoliutsiia pro vvedennia v diiu taryfiv za spetsialne vodokorystuvannia [Resolution about assertion of tax standards on the special water resources use]. (1999). *zakon.rada.gov.ua.* Retrieved from http://zakon3.rada.gov.ua/laws/show/836-99-%D0%BF [in Ukrainian].

5. Shevchuk, V. A., Gusev M. V., Mazurkevych, O. O., et al. (1996). *Ekonomika i ekolohiia vodnykh resursiv Dnipra [Economy and ecology of Dnipro water resources].* Kyiv: Vyshcha shk. [in Ukrainian].

Література

1. Дубас, Р. Економіка природокористування: підручник / Р. Дубас. – Київ : Видавництво Мале підприємство "Леся",2007. – 448 с.

2. Мельник, Л. Г. Екологічна економіка: підручник / Л. Г. Мельник. - Суми : Університетська книга, 2003. – 348 с.

3. Основи сталого розвитку : підручник / Л. Г. Мельник, О. І. Карінцева, С. М. Шевченко, М. К. Шапочка, Е. Бун, Л. Хенц, Р. Перельот, [та ін.]. – Суми : Видавництво Торговий дім "Університетська книга",2005. – 654 с.

4.Резолюція про введення в дію тарифів за спеціальне водокористування [Електронний ресурс]. - Режим доступу: http://zakon3.rada.gov.ua/laws/ show/836-99-%D0%BF.

5. Економіка і екологія водних ресурсів Дніпра: посібник / В. Я. Шевчук, М. В. Гусєв, О. О. Мазуркевич [та ін.]; за ред. В. Я. Шевчука. – К. : Вища шк., 1996. – 207 с

6. Податковий кодекс [Електронний ресурс]. - Режим доступу: http://zakon4.rada.gov.ua/laws/show/2755-17/page42.

6. Podatkovyi kodeks [Tax code]. (2010). *zakon.rada.gov.ua.* Retrieved from http://zakon4.rada.gov.ua/laws/show/2755-17/page42 [in Ukrainian].

7. Yatsyk, A. V. (2014) *Vodni resursy: vykorystannia, zakhyst, vidnovlennia, upravlinnia [Water resources: using, protecting, resumption, management].* Kyiv: Talkom [in Ukrainian].

8. Yatsyk, A. V., Khorev V. M. (2000). *Vodne hospodarstvo v Ukraini [Water management in Ukraine].* Kyiv: Heneza [in Ukrainian].

7. Яцик, А. В. Водні ресурси: використання, захист, відновлення, управління : підручник / А.В. Яцик. - Київ : Талком, 2014. – 406 с.

8. Яцик, А. В. Водне господарство в Україні / А. В. Яцик, В. М. Хорєв. – Київ : Генеза, 2000. – 456 с.

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