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ИССЛЕДОВАНИЕ ТЕНДЕНЦИЙ УПРАВЛЕНИЯ РИСКАМИ В УКРАИНЕ

Рассмотрено современное состояние управления рисками в Украине. Выделены основные факторы хозяйственного риска для украинских предприятий. Выявлены потребности украинской системы управления рисками, а также специфические особенности отечественного риск-менеджмента, обоснована необходимость его дальнейшего исследования и развития. Предложено процедуру выбора мероприятий по управлению рисками на промышленных предприятиях.

Ключевые слова: управление рисками, факторы риска, методы риск-менеджмента.

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RESEARCH OF THE ROLE OF THE WATER MANAGEMENT COMPLEX IN THE FORMATION OF FINANCIAL FLOWS

Показано роль та особливості водогосподарської ренти у генерації екологічних фінансових потоків. Визначено потенціал таких платежів на основі порівняння фактичних показників з розрахунковими. Розрахунки проведено в розрізі галузей економіки та регіонів. Поєднання цих підходів дало змогу побачити наявний рівень рентних надходжень та визначити перспективи їх коригування.

Ключові слова: водогосподарський комплекс, водна рента, фіскальна віддача, інвестиційна віддача.

1. Introduction

An important economic mechanism of the financial market of the state is payments for the use of water re-

sources. It is through the generation of these payments that significant financial flows are formed that contribute to the development of the water management complex (WMC) and its provision with the necessary means. The experience

of Ukraine considers them primarily as repressive mechanisms aimed at creating additional financial pressure on the subjects of activity. However, in a significant number of cases, the amounts of payments are not significant, and such that they can significantly affect the work of enterprises. Despite this, the general opinion is formed in a way that does not contribute to the formation of a balanced and rational attitude to environmental issues and the participation of enterprises in preservation of the environment.

2. The object of research and its technological audit

At the same time, environmental payments actually paid by enterprises, organizations, institutions for pollution of the environment are an important indicator that forms an idea of the features of generation of ecological financial flows and the weight of the water component in this process. Environmental payments consist in environmental tax and penalties for violation of environmental legislation. The problems of formation and improvement of environmental payments in Ukraine have been thoroughly considered in studies [1–6]. However, their role in the formation of financial flows of the state, the creation of investment resources, etc. is not fully investigated.

3. The aim and objectives of research

The aim of research is to determine the role and features of rental revenues generated in the water management complex (WMC) of Ukraine as components of the financial and investment markets of Ukraine.

To achieve this aim, the following objectives are set:

1. Analysis of the structure of tariffs for water supply in Ukraine.
2. Determination of the specific gravity of the rental component in the tariffs for water supply.
3. Comparison of imputed and actual water rent.
4. Assessment of fiscal and investment returns to water rents.
5. Definition of integral characteristics of the formation of rental income on the basis of situational analysis.

4. Research of existing solutions of the problem

In general, let's note that the total value of environmental payments for all activities for the state is significant and contains significant financial potential [7]. In the EU countries, these payments play the role of stimulants, encouraging them to pay for changes in ecological behavior (establishing additional filters, means of protection, etc.) [8, 9].

Important, in our opinion, is the positive aspect that the vast majority of the declared payments in Ukraine are paid. This gives grounds for the conclusion that the payment discipline of the system as a whole and the WMC in particular are high (in recent years, the percentage paid in the declared environmental payments in WMG varies within 85–90 %).

Environmental payments for water resources (like other pollution) are significantly differentiated by industry. The main payers (and therefore environmental polluters) are

energy, metallurgical and processing enterprises [10]. There are certain features in the dynamics and forecasting of environmental payments not only in the sectoral, but also in the regional context [11].

Like payments for pollution, water tariffs have a significant impact on attracting financial resources to the water complex. The experience of the EU countries shows that their tariff policy is formed at the national level and is mainly within the competence of national governments [12, 13]. At the same time, when forming tariffs, the countries rely on the Directive of the European Parliament and the Council of Europe No. 2000/60/EU. In this sphere, the subjects using water services are divided into 3 categories: agriculture, households and private enterprises. Accordingly, the cost of services is different.

It can be argued that an ecological and economic mechanism for regulating the use of natural resources has already been formed in Ukraine [14]. However, a number of important aspects are without attention of practitioners and scientists. In particular, it is the sphere of water supply that has been little explored in terms of the role of environmental payments in ensuring the functioning of the water management complex. The issues of the methodology for determining the rents are very relevant and controversial. To solve them, the analysis of the current structure and efficiency of rental payments in the water sector is of great importance.

5. Methods of research

To solve the objectives of this study, statistical data are used on the actually paid environmental payments for water use (water rent) in Ukraine in terms of industries and regions in 2014–2015. Some data until 2013 are used due to political events taking place on the territory of the state.

In determining the specific gravity of water rents, the average value was used in the structure of the tariff for water use. The specific gravity of the rent is determined only for the average, but also for the mode, the median, the minimum and maximum tariff values.

Actually paid rent is compared with the imputed one to show the possible potential role of payments for the special use of water in the formation of financial flows. Estimated rental payments are determined on the basis of the maximum costs of water development in the region with a certain volume of water consumption (closing costs). At the same time, the cost of water resources as the basis of human life and existence, flora and fauna; current annual expenses for the formation and protection of accessible water resources, as well as the price of water as a natural resource; the cost of water resources by the effect of economic use are also taken into account [10].

The participation of monetary receipts in the financial market is characterized by indicators of their fiscal returns and investment returns. The indicator of fiscal return for the water management complex is calculated on the basis of the ratio of rent payments, formed within the state or region, and the amount of consumed fresh water. High rates of return indicate a more favorable situation with regard to the receipt of funds in the sphere of water use, while low rates indicate the existence of certain local problems.

The indicator of investment returns for the water management complex is calculated on the basis of the ratio of rental payments that are formed within the state or region, and the volume of investment. High rates of

return testify to the participation of water rents in the formation of investment flows.

To determine the specifics of the formation of financial flows as a result of the collection of water rents, a comparison is made between the average for Ukraine and regional values, industry values, etc.

6. Research results

For a better understanding of the current tariff policy, let's determine the structure of the tariff. Each payment for the use of water resources includes in its composition a specific list of elements, which value determines the financial expression of the cost of the service. It is clear that the formation of a service for the water sector is a complex process that encompasses the chain from the water abstraction from natural sources to its supply to the end user. In addition, other structures are involved in this process, which spend their resources on supporting the water infrastructure.

The basic components of the water tariff are expenses for the purchase of energy carriers (about 30–35 %), wages (25–30 %), taxes (14–15 %), depreciation (about 7 %) and other. It is the increase in prices for energy carriers causes an increase in the tariff for water supply and sanitation services. Given Ukraine's significant dependence on external energy supplies, the situation is critical and acquires the features of an exogenous impact on water tariffs.

According to the available information of 2015, the tariffs for water supply vary by region, which is due to both the nature of the service and the economic realities of specific areas. The highest tariffs for the population were typical for Uzhgorod, Kirovograd and Rivne, the lowest – for Ternopil. For commercial consumers, the highest tariffs were fixed for Uzhhorod, the lowest – for Ternopil and Zhytomyr.

The majority of regions do not reimburse these tariffs for the actual cost of provided services. In 2015, when providing water supply services to the population, only 5 regions were able to reimburse their expenses, and when providing services to commercial institutions – 7. So, new tariffs are approved annually, but can't cover the costs of services. Perhaps the solution to this problem is the provision of subsidies for private institutions and subsidies for the population. At the same time, it also requires considerable financial resources that will significantly increase the deficit of the state budget.

For a significant number of cases, the factor that is also causes this state of affairs, is the lack of transparency in the distribution of funds from water supply and sanitation services. In the years a scheme has been formed when a sufficiently large number of organizations are involved in the process of providing services, and eventually the funds migrating between them are included in the corruption chains and do not form a stimulating influence on the development of the water complex.

The results of the statistical analysis of these indicators of 2015 are indicative of the relationship between tariffs for water supply and rental payments (Table 1).

On average in Ukraine, the rent rate is no more than 4 % of the tariff for centralized water supply.

Given the small rental income for water use, it is advisable to compare the actual performances with the estimated ones, which made it possible to show the possible, potential role of payments for special water use in the financial market of Ukraine.

Table 1

Ratio of tariffs for centralized water supply and rental rates for special water use

Statistical indicator	Tariffs for centralized water supply, UAH/m ³	Rental rate, UAH/100 m ³	Ratio of rent and tariffs, %
Average value	12.7	55.4	4.3
Mode	9.3	66.0	7.1
Median	12.0	53.5	4.5
Minimum value	1.1	37.5	35.3
Maximum value	30.3	89.2	2.9
Dispersion	28.2	138.0	–
Mean deviation	5.3	11.7	–
Variation coefficient	41.7	21.2	–

To this end, calculations of actual and imputed rent (by closing costs) are made in respect of the branches of the economy and regions. The imputed rent is determined on the basis of the approach, which takes into account the closing costs that are present in the context of the increase in water resources [10]. The combination of these approaches allows to see the current level of rental income and determine the prospects for their adjustment [11].

As the results of calculations show, sectoral priorities for actual rent and for closing costs have both similar features and distinguishing features (Table 2, 3). Thus, when using both approaches, there is a clear predominance of revenues from the production sector (almost 60 % for actual rent and more than 40 % for imputed), which is the locomotive of the formation of payments.

A characteristic feature is the significant differentiation between numerical values. If for actual rent the difference between the maximum and minimum values is more than 12 times, then the indicators for closing costs differ only by 2.5 times.

In the regional context, the level of economic development influences the formation of rent. Those regions that have the highest rates of actual payments are the leaders and for the closing costs. The regions-outsiders for two types of rent are Volyn, Zakarpattia, Sumy and Ternopil regions. At the same time, the ratio of the maximum and minimum values behind these approaches is excellent. If for a real rent such ratio is 56.2 times, then for closing costs – several times more.

So, the water complex is able to generate a significant value on the basis of rental payments. The amount of revenues in the amount of 6.1 billion UAH, which takes into account the main costs in the water complex, can serve as a guide for the possible dynamics of changes in indicators. At the same time, a significant increase in tariffs in the conditions of transformations and crisis phenomena is quite dangerous, as it can affect the formation of non-payments, business braking, rising production costs, social tension and the like. The best option is a phased increase in payments and their harmonization with the parameters of the state's social and economic development.

The related characteristics of the WMC as a participant in the financial market include the indicator of fiscal return and investment return of water use. Indicators are concentrated in the financial sphere, which allows to determine the ratio of rental characteristics in financial processes.

Table 2

Indicators of rental income (actual rent) in the context of the regions of Ukraine in 2015

Table 3

Imputed rent in the context of the regions of Ukraine in 2015

Regions	Actual rent, million UAH*				
	Household needs	Pro-duction	Irriga-tion	Agribusi-ness	Total
Ukraine	229.6	451.9	46.7	35.5	763.7
Autonomous Republic of Crimea*	2.0	2.1	14.5	10.3	28.9
Vinnitsia	5.1	7.4	0.3	0.2	13.0
Volyn	1.4	0.8	0.0	0.0	2.2
Dnipropetrovsk	30.5	87.4	2.1	1.5	121.5
Donetsk*	31.8	89.8	1.2	0.9	123.7
Zhytomyr	3.2	4.3	0.0	0.0	7.5
Zakarpattia	3.8	1.0	0.0	0.0	4.8
Zaporizhzhia	17.1	81.0	6.4	4.6	109.1
Ivano-Frankivsk	2.1	4.7	0.0	0.0	6.8
Kyiv region	5.7	32.1	0.2	0.2	38.2
Kirovograd	12.0	9.4	0.6	0.5	22.5
Lugansk*	15.4	15.9	0.9	0.7	32.9
Lviv	16.0	8.9	0.0	0.0	24.9
Mykolaiv	5.6	9.6	6.4	4.5	26.1
Odessa	2.1	0.9	1.9	1.4	6.3
Poltava	7.1	4.2	0.0	0.0	11.3
Rivne	3.4	8.1	0.0	0.0	11.5
Sumy	2.9	1.9	0.0	0.0	4.8
Ternopil	1.7	2.1	0.0	0.0	3.8
Kharkiv	13.0	12.7	0.3	0.2	26.2
Kherson	0.5	0.3	11.7	7.7	20.2
Khmelnitskiy	0.0	6.3	0.0	0.0	6.3
Cherkasy	14.3	13.0	0.0	2.8	30.1
Chernivtsi	13.8	17.5	0.0	0.0	31.3
Chernihiv	3.7	6.3	0.0	0.0	10.0
Kyiv	11.9	21.3	0.0	0.0	33.2

Note: * – payments are taken into account for special water use at the level of local budgets; data for 2013 are used.

Regions	Actual rent, million UAH*				
	Household needs	Pro-duction	Irriga-tion	Agribusi-ness	Total
Ukraine	980.0	2493.8	1463.6	1190.3	6126.3
Autonomous Republic of Crimea*	71.4	53.9	322.0	261.2	708.5
Vinnitsia	16.3	24.8	0.8	0.8	42.7
Volyn	12.9	6.6	0	0	19.5
Dnipropetrovsk	57.8	215.8	4.4	3.6	281.6
Donetsk*	13.0	50.1	0.5	0.5	64.1
Zhytomyr	16.1	22.5	0	0	38.6
Zakarpattia	7.8	1.7	0	0	9.5
Zaporizhzhia	109.7	927.2	64.8	53.0	1154.7
Ivano-Frankivsk	11.4	30.0	0	0	41.4
Kyiv region	39.1	510.5	2.2	2.0	553.8
Kirovograd	24.4	18.0	1.0	0.9	44.3
Lugansk*	20.7	20.4	1.0	0.9	43.0
Lviv	39.1	20.5	0	0	59.6
Mykolaiv	5.7	9.9	5.6	4.6	25.8
Odessa	36.2	13.2	24.9	20	94.3
Poltava	12.2	6.8	0	0	19.0
Rivne	13.3	37.3	0	0	50.6
Sumy	14.0	8.4	0	0	22.4
Ternopil	9.3	11.7	0	0	21.0
Kharkiv	31.5	29.8	0.6	0.5	62.4
Kherson	55.2	28.2	1028.5	836.6	1948.5
Khmelnitskiy	18.3	19.3	0	0	37.6
Cherkasy	24.3	21.8	5.9	4.7	56.7
Chernivtsi	5.6	8.3	0	0	13.9
Chernihiv	15.8	41.6	0	0	57.4
Kyiv	273.5	337.2	0	0	610.7

Note: * – payments are taken into account for special water use at the level of local budgets; data for 2013 are used.

According to the obtained data, with the overall index for the country at 0.11 UAH/m³, the regions-leaders in terms of fiscal return were Chernivtsi (with a value of 0.41 UAH/m³), Kirovograd (0.29), Kherson (0.27), Lugansk (0.18) and Zakarpattia (0.16). These areas are western and southeastern. The lowest values are recorded for such regions as Odessa (0.02 UAH/m³), Volyn (0.03), Crimea (0.04), Kiev region (0.04) and Sumy (0.05) (Table 4).

It is logical to assume that in the regions most consumed by water (due to population growth, industrial facilities), and fiscal return should be significant. However, this is not observed. Kharkiv region occupies only 15 place, Kyiv – 18, Kyiv region – 24. But regions with lower levels of economic development are more effective. It is clear that the reasons for this situation include the current tax rates (according to the Tax Code of Ukraine) and the insignificant amount of consumed water. At the same time, it is necessary to take into account the level of economic development of a particular region that based on the available potential can pay higher tariffs. To take into account such situation, adjustments are required by existing rates for special water use or introduction of additional coefficients that take into account the level of economic development.

Table 4

Indicators of fiscal return of water use for Ukraine and its regions as of 01.01.2014

Regions	The volume of consumed fresh water, million m ³	Fiscal return, UAH/m ³	Rating of region by fiscal return	Specific weight of water rental payments in the charges and fees for special use of natural resources, %
Ukraine	9092.00	0.11	–	5.4
Autonomous Republic of Crimea*	769.00	0.04	25	3.9
Vinnitsia	115.00	0.11	11	3.7
Volyn	64.00	0.03	26	1.7
Dnipropetrovsk	1349.00	0.09	13	5.3
Donetsk*	1354.00	0.09	12	7.6
Zhytomyr	158.00	0.05	22	2.5
Zakarpattia	30.00	0.16	5	4.2
Zaporizhzhia	1237.00	0.09	14	13.5
Ivano-Frankivsk	93.00	0.07	16	3.0
Kyiv region	866.00	0.04	24	6.9
Kirovograd	79.00	0.29	2	7.0
Lugansk*	179.00	0.18	4	6.8
Lviv	157.00	0.16	6	5.9
Mykolaiv	214.00	0.12	10	8.7
Odessa	299.00	0.02	27	0.9
Poltava	220.00	0.05	21	1.9
Rivne	164.00	0.07	17	5.9
Sumy	104.00	0.05	23	1.4
Ternopil	73.00	0.05	20	3.1
Kharkiv	341.00	0.08	15	3.1
Kherson	74.00	0.27	3	8.4
Khmelnitskiy	81.00	0.15	8	4.3
Cherkasy	213.00	0.14	9	7.0
Chernivtsi	73.00	0.41	1	20.7
Chernihiv	156.00	0.06	19	3.6
Kyiv	581.00	0.07	18	2.0
Sevastopol	49.00	0.15	7	3.2

Note: * – payments are taken into account for special water use at the level of local budgets; data for 2013 are used.

The spatial variation in fiscal returns is moderate. The difference between the maximum and minimum values (Chernivtsi-Odessa region) is 20.5 times, which is not a significant value for the financial sector. A characteristic feature of the regional distribution (Fig. 1) is the predominant localization of most regions within the values of 0.04–0.09, which gives grounds for asserting the existence of a certain territorial constant (1) for fiscal returns. Despite such territorial concentration, it requires its growth, because it remains at a low level. Another territorial constant (2) is the range of values 0.11–0.18, to which a significant number of regions also belong.

An important aspect of the formation of rental payments for special water use is to determine its place in total payments for all natural resources. The indicator for Ukraine as a whole is 5.4 %. In the structure of incomes of local budgets across the country, it is one of the highest, which is a positive side (for a significant number of areas, the top positions are paid for land).

In the regional dimension, it is possible to single out a whole group of regions whose values exceed the level of the state. Among them the main are Chernivtsi region (20.7 %), Zaporizhzhia (13.5 %), Mykolaiv (8.7 %) and 9 other regions. The regions-outsiders by their values are Odessa and Volyn regions (Fig. 1).

The indicator of the investment return of water use for the market forms an idea of the capacity, the potential of water payments in the financial market. If rental income is significant relative to the amount of investment, it allows to talk about their significant impact on the financial market, low – their effect is not significant enough. As water payments, let's take rental income at the level of local budgets, investments – investments in the financial sector of the economy (financial and insurance activities, real estate transactions, information and telecommunications).

The total value of the investment return of water use for Ukraine is 0.155 (Table 5). Similar to the indicators of fiscal return, regions with a lower level of economic development are more effective in investing.

The leading positions are occupied by Kirovograd (0.874 UAH/UAH), Chernivtsi (0.729), Zaporizhzhia (0.420), Mykolaiv (0.237), Chernihiv (0.227) regions. The smallest values are concentrated within the following regions: Kyiv (0.002), Volyn (0.003), Odessa (0.004), Lviv (0.021), Sevastopol (0.027).

In accordance with the distribution, the leading regions, together with others, form a high-level group of the investment return of water use for the financial market (Group I), the outsider regions are below the middle (Group IV). The remaining regions are distributed between the high-level group (Group II) and the middle (Group III) group.

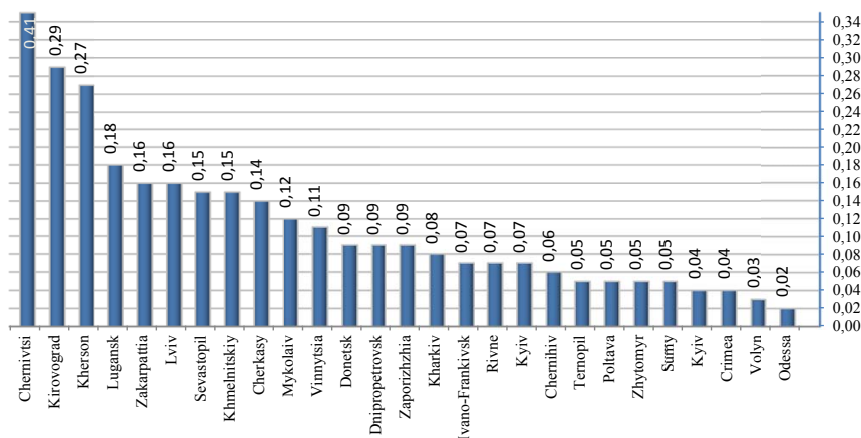


Fig. 1. Ranking the regions of Ukraine according to the indicator of fiscal return of water use as of 01.01.2014

Table 5

Indicators of investment return of water use for the market of Ukraine and its regions as of 01.01.2014

Regions	Rental payments (real), mln. UAH*	Investments in the financial sector of the economy, mln. UAH	Investment return, UAH R/UAH Invest.	Rating of region by investment return	Region group
Ukraine	772.45	30636.6	0.155	–	–
Autonomous Republic of Crimea*	28.88	278.2	0.104	11	II
Vinnitsia	13.07	91.7	0.143	10	II
Volyn	2.13	712.0	0.003	26	IV
Dnipropetrovsk	121.41	2256.7	0.054	17	III
Donetsk*	123.42	2009.7	0.061	16	III
Zhytomyr	7.49	93.2	0.080	13	III
Zakarpattia	4.78	97.9	0.049	19	III
Zaporizhzhia	109.13	259.9	0.420	3	I
Ivano-Frankivsk	6.84	72.0	0.095	12	III
Kyiv region	38.07	745.1	0.051	18	III
Kirovograd	22.55	25.8	0.874	1	I
Lugansk*	32.89	147.8	0.223	6	I
Lviv	24.90	1168.2	0.021	24	III
Mykolaiv	26.15	110.2	0.237	4	I
Odessa	6.28	1484.0	0.004	25	IV
Poltava	11.34	276.5	0.041	20	III
Rivne	11.45	56.7	0.202	7	I
Sumy	4.81	149.7	0.032	21	III
Ternopil	3.78	59.5	0.064	15	III
Kharkiv	26.25	882.8	0.030	22	III
Kherson	20.21	127.5	0.159	9	II
Khmelnytskyi	12.19	163.7	0.074	14	III
Cherkasy	29.58	160.4	0.184	8	II
Chernivtsi	29.58	40.6	0.729	2	I
Chernihiv	9.04	39.8	0.227	5	I
Kyiv	38.80	18846.0	0.002	27	IV
Sevastopol	7.45	281.0	0.027	23	III

Note: * – payments are taken into account for special water use at the level of local budgets; data for 2013 are used.

The leading positions of regions with a lower level of development are explained, first of all, by favorable ratios of rental payments on investments in the financial sector of the economy. After all, to get high values, it is necessary not only a rental income, but also the necessary investments. Leading regions are such favorable attitude. They are not determined by high rental income (with the exception of the Zaporizhzhia region) and a significant saturation of the market with investments. The combination of these factors and brought them to the leading.

If take into account Dnipropetrovsk and Donetsk region, then they show significant rental income, however, investments in their financial markets are so significant that they level out water rent. At the same time, such smoothing is not significant, which causes the localization of these regions within the framework of group III.

The spatial variation between the values is significant, which is a characteristic feature of financial markets. The average level of investment return of water use is exceeded in nine regions.

7. SWOT analysis of research results

To determine the integral characteristics of the formation of rental income, let's apply the situational (SWOT) analysis, which allows to record clear consequences and determine the range of prospective features of positive (opportunities) and unfavorable (threat) content.

Strengths:

1. Receipts to local and state budgets of rental payments for the use of water resources are implemented.

2. The prevailing tendency of growth in actual rental payments for the use of water resources (under the consolidated budget of Ukraine); strengthening the importance of local budgets in rental income in recent years.

3. Sectoral and territorial stratification of water rents makes it possible to differentiate the implementation of state policy and a set of appropriate response measures.

4. The importance of adjacent characteristics of the functioning of the water management complex in the financial market (indicators of fiscal return and investment return of water use for the financial market) are adaptive.

Weaknesses:

1. Given the significant potential of the domestic market, there are low rates of actual rent.

2. Low specific gravity of rent payments from local budgets during some years of evaluation.

3. The ratio of actual rent to the imputed (by closing costs at the level of local budgets) is 1:8.0.

4. There are obstacles to the increase in rental payments, due to the current impact factors (especially in the context of transformation and crisis phenomena).

5. There are significant territorial differentiations for individual indicators (in particular, for indicators of investment return of water use for the financial market).

Opportunities:

1. The WMC may generate significant financial flows (on the basis of revenues to local budgets) that are able to actively involve the complex in the financial and economic sphere.

2. There is a significant rent potential for closing costs for the state and regions of Ukraine.

3. It is advisable to take into account the indicators of fiscal return and investment returns when developing the foundations of the state water policy.

4. There is a potential for growth in fiscal return from water use.

Threats:

1. Decrease in payments as a result of current crisis processes.

2. Strengthening regional differentiation of rental indicators as a result of the introduction of the principles of decentralization.

3. In the context of the influence of current factors – low opportunities for the implementation of rental indicators.

4. Significant variations in the influence factors on the formation of adjacent characteristics, which leads to fluctuations in these indicators.

5. Significant influence of political decisions on the specifics of the implementation of water policy in Ukraine.

As the analysis shows, the main strengths of rental income can be attributed to the stable formation of local and state budgets, their situational growth, the strengthening of the role of local revenues, and the weak sides – low actual water rent indicators, significant differences between actual receipts and the like. Opportunities and threats are associated primarily with the significant potential and the influence of unfavorable factors.

8. Conclusions

As a result of the conducted studies, the place of water rents in the formation of financial flows, its potentialities and peculiarities of the sectoral and regional distribution of actually paid payments are discovered.

1. The formation of the cost of water supply services is a complex process that encompasses a chain of costs from water abstraction from natural sources to its supply

to the end user. Currently, the main components of the water tariff are the costs of acquiring energy, wages and taxes.

2. A special component of the payment for water use is rent. On average in Ukraine, the rent fee is no more than 4 % of the tariff for centralized water supply. For modal tariff values – more than 7 %. In Ukraine, water tariffs vary by 42 % of the average, and the rent is only 21 %. In this case, the maximum value of the tariff and the maximum rent are related as 1 to 0.029, and the minimum – as 1 to 0.33. So, rental water payments have significant potential for participation in the formation of financial resources of the state and regions.

3. Comparison of actually paid rent with its possible imputed value reveals that its formation is influenced by the level of economic development of the territory. Those regions that have the highest rates for actual receipts of payments are leaders and by value (closing costs). At the same time, the ratio of the maximum and minimum values for these approaches is distinguishing. If for a real rent such ratio is 56.2 times, then for closing costs – several times more. By branch features, in both cases the maximum values of rent are observed in the production sector.

4. As for adjacent characteristics of the WMC as a participant in the financial market (fiscal return and investment return of water use) it turned out that high returns have regions with not high indicators of economic development. This ratio is influenced by various factors, however, it can be argued that the current rates for special water use need to be revised or adjusted due to the introduction of appropriate coefficients. The results of analysis of the potential of rent payments, their sectoral and regional distribution, fiscal and investment returns should be taken into account when developing the foundations of the state water policy.

5. Integral characteristics of rental income that are generated as a result of situational analysis reflect the clear consequences of the current policy of recovery of water rents and determine the opportunities and threats of WMC participation in the formation of financial flows.

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ИССЛЕДОВАНИЕ РОЛИ ВОДОХОЗЯЙСТВЕННОГО КОМПЛЕКСА В ФОРМИРОВАНИИ ФИНАНСОВЫХ ПОТОКОВ

Показана роль и особенности водохозяйственной ренты в генерации экологических финансовых потоков. Определен потенциал таких платежей на основе сравнения фактических показателей с расчетными. Расчеты проведены в разрезе отраслей экономики и регионов. Сочетание этих подходов позволило оценить имеющийся уровень рентных доходов и определить перспективы их корректировки.

Ключевые слова: водохозяйственный комплекс, водная рента, фискальная отдача, инвестиционная отдача.

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FINDING OF ALTERNATIVE SOURCES OF INNOVATIONS FUNDING IN AGRICULTURE

Висвітлено та досліджено аспекти альтернативного фінансування розвитку сільського господарства України. Розглянуто основні тенденції, що склалися в сучасних умовах щодо використання інструментів альтернативного фінансування, охарактеризовано особливості та можливості використання таких форм залучення фінансових ресурсів. Механізм фінансування через альтернативні джерела сприятиме полегшеному доступу суб'єктів господарювання сільськогосподарської галузі до фінансових ресурсів.

Ключові слова: розвиток інновацій, сільськогосподарський ризик, альтернативні джерела, альтернативні форми фінансування, державна підтримка сільськогосподарських інновацій.

1. Introduction

Financial support of sustainable development of agriculture is very important, because this development ensures food security, contributes to the transformation of the agricultural sector in a highly competitive sector and in the domestic and foreign markets, and provides a comprehensive rural development and social problems in rural areas.

The need for investment in agriculture is increasing due to the growing global population and changing diet preferences of the growing middle class in the markets towards higher quality products (such as dairy products, meat, fish, fruit, vegetables, etc.).

The banking sector has a much smaller share of their loan portfolios in agriculture compared with the share of

agriculture in GDP. This limits investment in agriculture and indicates that the threshold for loans not due to lack of liquidity in the banking sector, but rather due to lack of willingness to expand lending to agriculture.

Even if there is, most of the funding for agriculture is usually informal and short precluding a long-term investment. This informal funding only partially covers the financial needs of farmers and small agribusinesses, and usually at a high cost.

2. The object of research and its technological audit

In order to effective formation of an innovative agricultural development strategy, a study of financing sources