



PhD, Assoc. Prof. Natalia Kovshun

*Department of Enterprise Economics, National University of Water
Management and Nature Resources Use (Rivne, Ukraine)
n.e.kovshun@nuwm.edu.ua*

**THE IMPACT OF THE ECONOMIC CRISIS ON THE FINANCING OF THE
WATER MANAGEMENT COMPLEX IN UKRAINE**

**WPLYW KRYZYSU GOSPODARCZEGO NA FINANSOWANIE KOMPLEKSU
GOSPODARKI WODNEJ NA UKRAINIE**

**ВЛИЯНИЕ ЭКОНОМИЧЕСКОГО КРИЗИСА НА ФИНАНСИРОВАНИЕ
ВОДОХОЗЯЙСТВЕННОГО КОМПЛЕКСА УКРАИНЫ**

Abstracts

The article considers how the water management complex (WMC) in its development is affected by financial and economic processes. The peculiarities of the bilateral interaction of the complex and the financial and economic system of the state are analyzed. Economic mechanisms are considered, when using which the WMC complex is a recipient of cash flows. The conditions under which WMC can function as their generator are shown, forming and introducing new principles and tendencies to the internal system of the state. The negative and positive factors of development of the corresponding economic mechanisms are analyzed. The impact of the crisis on the development of the complex is taken into account - both negative and positive aspects of its impact on the chemical industry are shown.

Key words: water management complex, economic mechanism, conservative economic mechanisms, innovative economic mechanisms, rent, investment, crisis.

Streszczenie

W artykule został przedstawiony wpływ procesów finansowych i gospodarczych na system zarządzania wodą (SZW). Została zbadana specyfika współpracy dwustronnej systemu zarządzania wodą a systemu finansowego i gospodarczego państwa. Zostały zbadane mechanizmy ekonomiczne, których stosowanie powoduje, że kompleks SZW jest odbiorcą przepływów pieniężnych. Zostały przedstawione warunki, w których SZW może działać jako generator przepływów pieniężnych wprowadzając nowe strategie i tendencje w systemie wewnętrznym państwa. Również zostały przeanalizowane negatywne i pozytywne czynniki rozwoju odpowiednich mechanizmów finansowych. Pod

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Opublikowany: 2017-12-30

DOI: 10.5604/01.3001.0010.7630

Wydanie: International Journal of New Economics and Social Sciences 2017; 2 (6): 140-151

uwagę również został wzięty wpływ kryzysu na rozwój kompleksu – zostały pokazane zarówno negatywne, jak i pozytywne aspekty jego wpływu na SZW.

Słowa kluczowe: *system zarządzania wodą, mechanizm gospodarczy, konserwatywne instrumenty gospodarcze, innowacyjne instrumenty gospodarcze, renta, inwestycje, kryzys*

Аннотация

В статье рассмотрено влияние финансово-экономических процессов на развитие водохозяйственного комплекса (ВХК). Проанализировано особенности двустороннего взаимодействия комплекса и финансово-экономической системы государства. Рассмотрены экономические механизмы, при использовании которых ВХК комплекс является реципиентом денежных потоков. Показаны условия при которых ВХК может функционировать как их генератор, формируя и привнося новые принципы и тенденции к внутренней системе государства. Проанализированы негативные и позитивные факторы развития соответствующих экономических механизмов. Учтено влияние кризиса на развития комплекса – показаны как отрицательные, так и положительные стороны его воздействия на ВХК.

Ключевые слова: *водохозяйственный комплекс, экономический механизм, консервативные экономические механизмы, инновационные экономические механизмы, renta, инвестиции, кризис.*

The problem statement in general and its connection with important scientific and practical tasks.

Water resources are on the list of the country's and its regions' most important factors of social and economic development. Water consumption problems, water availability, satisfying the growing needs of the economy and the population are becoming increasingly acute from year to year and attract more attention. Water consumption problems, water availability, satisfying the growing needs of the economy and the population are becoming increasingly acute from year to year and attract more attention. The

leading role in water utilization conflict resolution play economic gear.

At the moment a crisis occurs in the water resources management, use and protection in Ukraine. Scientists and practitioners face the problem of improving water resources system use over decades. However, the existing functioning and financing water management complex system is very contradictory. All of the above mentioned the problem of developing modern water resources management mechanisms and efficiency of its use.

Analysis of the latest studies which initiated the problem solving.

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Despite significant number of domestic and foreign scientists' studies (particularly) devoted to the rationalising water consumption in particular Balatsky O.F. [19], Galushkina T.P. [8], the scientific team of Natural Resources and Economy Sustainable Development Institute (Khvesik M. A., Golyan V.A., Levkovskaya L.V., Mandzik V.M., Dragan I. O., Sunduk AM, Pilipov V. V) [5, 13, 17, 18], Ukrainian Research Institute of Water and Environmental Problems (Tomiltseva A.I., Yatsik A.V., Tomiltsev M.G., Voloshkina O.S., Gozhik D.M.) [4, 6, 12] and others, nowadays this problem remains a subject of scientific discussions.

The water management complex (WMC), like other natural complexes that are clearly localized within the internal system of the state, is affected by financial and economic processes in its development. A special feature of this influence is bilateral interaction, when the complex is a recipient of the existing effects, and can also act as their generator, forming and introducing new principles and tendencies to the internal system of the state.

At the current stage of development the impact of financial and economic processes has increased, which led to the complex functioning monetization. Under such circumstances, the WMC, for the purpose of adaptation to the environment, must possess an effective set of mechanisms that can maintain the range of profitability and ensure sustainable development. This situation requires conduction of the work complex to accumulate positive experience and develop new approaches to financing the functioning of the water management system.

Exposition of the main study material with a complete justification of the obtained scientific results.

An effective set of mechanisms has significant impact on supporting and ensuring sustainable development of the state in general and the WMC in particular.

This is manifested in the fact that the mechanisms have the ability to stimulate careful and efficient water consumption, and that will enable to care of the water resources conservation and protection while ensuring the current needs of the population and the economy. How does this happen?

First, through financial measures towards water users and consumers affected by Governmental financial measures. Such measures are an effective tool for changing behavior regarding the water consumption (especially for large industrial facilities). Secondly, based on financial restrictions imposed by the state (environmental charges, fines, etc.). Thirdly, because of the water management structures possibility to generate internal cash flows (and being in this way a full-fledged business entity).

The consumers entities are motivated by incentives, restrictions, and needs to treat water resources efficiently and as a valuable element of the environment. And this, in its turn, contributes to the environmental component concept of sustainable development (besides the economic and social components). Thus sustainable development in water resources field will be urged to its growth providing economic mechanisms efficient implementation.

It is important to note that in terms of Ukraine's integration into the EU, the strengthening economic functioning

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mechanisms tendency will only grow (based on the existing global trends in the economy of the environment). The experience of European countries (our closest neighbors in particular) demonstrates the significant prospects for the economic instruments development as effective tools of functioning and effective means of generating financial flows for the water sector (some instruments are reflected in water directives that serve as guidelines for EU member countries) [3, 9, 10].

At the same time it is important to take into account the possibilities of its application, when new tools implementation occur, because there are significant differences between complex operation environment in Ukraine and the EU countries when it comes to legislative regulation, etc. Likewise, not all the latest tools can find their application even for highly developed countries. For example, the introduction of separate exchange tools (in the sphere of quoting the Guggenheim S & P Global Water Index ETF or iShares Global Water Index ETF in particular), which can attract additional funds for the complex development, requires specialized elements presence. To be discussed below.

In terms of fundamental performance indicators international positioning of Ukraine influences the foreign instruments application possibility. Foreign investors who want to invest their funds and experience in the development of the Ukrainian water industry (with clearly defined profit opportunities) pay attention to the simplicity of doing business, political freedoms, etc in Ukraine.

It should be noted that our country's situation regarding particular rating

indicators is favorable, although, in general, the state's positions are low and significant adjustment is required. For example, Ukraine is placed at 76th spot in the Global Competitiveness Index 2014-2015 (75 - the Slovak Republic, 77 - Croatia) [7], the Ease of Doing Business ranking (2015) - 96 [1], the Index of Economic Freedom (2015) - 162 [2].

Despite the existence of factors that influence the instruments attraction, Ukraine has a significant advantage - it is a developing country with markets those are being formed. Regardless, the existence a large number of problems, they create a favorable possibilities range for growth and open up new development prospects. Investing in countries like Ukraine allows investors to make significant and rapid profits (unlike it is in Western Europe).

While exploring the use of economic mechanisms principles, it should be noted that in a meaningful sense, an economic tool is treated as a specific instrument (means). The implementation of the above mentioned instrument allows to form an impact on the water complex performance through operational actions in the economic area. The basic criterion for the economic mechanism functioning is its ability to influence the characteristics of the complex development. At the same time, it is possible that such situation occurs when theoretically, the mechanism is effective and in many cases has shown its effectiveness, but, when used by the management entity has not reached its goal at a particular moment.

Taking into account the significant number of economic mechanisms, they can be differentiated into those that forward funds to the complex (donor mechanisms, DM) and a range of those

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whose activities are aimed at the formation of funds within the complex and their further movement from the complex (recipient mechanisms, RM). There is predominance of donor funds that channel financial resources into the structure of the complex considering the current characteristics of the chemical industry development and the peculiarities of its positioning in the financial sphere and economic processes. These circumstances do not contribute to a dynamic integration of the structure of the complex into the economic processes

sphere. And this, in turn, does not form the effective development prerequisites, and doesn't establish economic mechanisms for the complex functioning.

As for the novelty for the endogenous environment, all economic mechanisms can be conditionally differentiated into conservative (CM) and innovative (IM). The first include those that are used for a long period of time and have already been adapted to the functioning of the complex itself. Innovative mechanisms are determined by the novelty of the introduction and, probably, the complexity and uncertainty regarding the operation of the complex. _In regard to this, it is necessary to analyze the capabilities of the WCC during the implementation of new mechanisms with respect to their utilization (how they correspond to the features of the complex).

Capital investments applied to the complex, tax instruments, loans, payments for the water resources use, etc can be attributed to the CM. The expert assessment reports the use of conservative mechanisms for the current period is about 90% of the possible means of regulating the WMC activities. Similar percentage was formed during the early years of

independence of Ukraine and was prolonged for the next decades.

Group is characterized by a significant focus on state support and state institutions. In considerable issues the state is the main donor of these funds, and, accordingly, it determines the mode of their receipt, ensuring the basic functioning of the complex.

IMs are represented by such positions as capital investments in water business, capitalization, corporatization, public-private partnership, etc. Separate components of these mechanisms have found their application in Ukraine, however, their approbation is fragmentary and situational, as it requires an appropriate institutional environment. Tools such as rent occupy a transitional position, since they combine the features of the two main groups.

Unlike the conservative, innovative mechanisms are more oriented toward the private capital participation, which initiates specific projects based on their corporate interests. Accordingly, the MIs are characterized by a significant potential, if we take into account the possibility of generating payments by activating these mechanisms. The reason for this is the significant level of their orientation on the financial markets and the relationship. If they are directed at operations with financial flows, then, accordingly, they can be attracted and directed to the water complex. At the same time the funds attracting possibilities using IMs are rather variable, because they are determined by lower stability and shorter duration of time.

The WMC gradual transnationalization is an interesting feature of the attracting MIs process. The process content lies on the work commencement between the

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structures of the complex and foreign financial markets structures. The consequences of this require a separate study.

The state should take all measures to introduce precisely the innovative tools that generate significant financial flows. It is estimated [18], that the value of market characteristics (which is formed in many respects by IMs) may be in amount of 11 billion USD (in internal prices) and \$ 32 billion (on the international price).

It is important to focus on economic mechanisms in their development and use are influenced by number of factors that determine opportunities and features of their action. These factors form the framework "field of activity" boundaries determined a specific economic mechanism "scope (range) of activity". If the factor's influence is too strong, then the activity mechanism possibilities vary considerably. If the influence acts as a stimulating factor, then the activity gets a boost to its acceleration and growth, otherwise it is substantially limited.

We will determine the main factors of influence on the WMC economic mechanisms functioning and development taking into account the Ukrainian conditions based on the main positive and unfavorable factors' estimation. Among the positive factors, we distinguish the following.

1. It is the usage of existing economic mechanisms and implementation of new ones such as market demand. Current situation encourages to use economic tools actively for the effective complex functioning. If the complex will be guided by the economic instruments use, it will become self-sufficient, capable of implementing effective projects, it will

meet the consumers demand completely and build acceptable relations with the state. Otherwise (if economic mechanisms are neglected) it can lead to its market isolation and its emplacement outside the financial and economic sphere as well as the flows that are being formed.

2. Having a positive experience while using economic mechanisms. As the experience shows, there are examples of the mechanism utilization that provide to favorable consequences in case of their implementation. Despite current problems, the activation of these instruments has positive results. Donor and conservative mechanisms are widely used. Gradually the recipient and innovative tools are implemented. If it goes about beneficiary instruments, an example of their use is the official information from the State Agency for Water Resources, according to which revenues from the contribution of paid services is about 0.5 billion UAH during the year [15].

3. Presence of numerous corporations that are interested in establishing partnership with the WMC structures within the domestic economic space of Ukraine. It is about the existence of the potential for such interaction. For example, a powerful steel plant located in the south-eastern regions of Ukraine is interested in supplying to its production facilities a certain additional amount of water resources (for production expansion). It cooperates with local structures of the state water complex. From the enterprise side it is possible to finance the building of additional water pipelines and maintain them in good condition, to pay for the water consumption. It is possible to build sewerage or disposal facilities for wastewater flows for both industrial

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enterprises and nearby settlements. The management of the complex is committed to promote such project (in accordance with the environmental standards of the region), provide its support, etc.

The whole range of cooperation of private structures with water complex structures should be carried out as public-private partnership, which implementation has just been introduced in Ukraine. It is possible to attract powerful international companies, to this process, those have subsidiaries in Ukraine (and have opportunities for such projects), in particular, Coca-Cola, Procter and Gamble, Arcelor Mittal and others.

4. New economic tools introduction in the context of Euro Integration processes. Ukraine has chosen the integration into the EU zone. And this, in turn, also presume the water complex involvement in this process and the economic mechanisms introduction activation.

5. The possibility of attracting additional credit resources from foreign financial institutions. In continuation of the above-mentioned, we should say that at the current stage Ukraine has significant opportunities for receiving foreign support, loans for the development of its infrastructure environment. Implementation of credit programs for WMC allows to use economic tools for regulating water use in a more effective way. It is important that the attracted resources are directed mainly to the implementation of fundamentally new economic relations within the complex, and to conduction its qualitative change.

There are several crucial factors affecting the functioning and development of economic mechanisms of the WMC.

1. Slow development of the infrastructure environment - lack of the

necessary "infrastructure underlay", which would make the effective use of existing and introduction of new tools and approaches possible is one of the most influencing elements. Even if the entities express the desire to use economic mechanisms, this will not be sufficient if the country does not have an adequate environment for their use.

2. Lack of strategic development and implementation priorities. The point is that economic instruments, for their better functioning, need clear principles for further progress, which would form ideas about the use boundaries, features of implementation and so on. Certainly there are such documents regulating the activities of the WMC, its components now, thus due attention is not paid to the economic instruments.

3. Obstacles caused by authorities. It is clear that at the current stage of development, the state has the predominate influence on the WMC activities. Therefore it controls its activity. On the one hand, this is a favorable feature, since under such conditions stable government funding and other resource support is guaranteed. On the other hand, the issue is that the state, despite free market announcement and decentralization, does not want to lose control over state institutions and financial flows that have been under its control for years. The government tries to protect itself from possible changes. Accordingly, its actions will be directed to minimize them. This can happen through legislative innovations that could limit the activities of other structures, or general declarations, which are reasonable only in theory.

4. Ineffective complex management. The structures of the complex have a significant potential for the economic

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mechanisms effective use. At the same time, the existing potential and resources are being developed and used ineffectively.

Among the reasons of the current situation are low qualified water complex management structure and corresponding work efficiency.

In this case, it is important to focus on the following: there is no task to completely eliminate the state's influence on the complex functioning, but to transform its role. To ensure the implementation of state strategic priorities in the water sector, a high quality and effective state management is needed, which will enable to involve additional structures (private entities) in the process.

5. Low level of interaction between the structures of the WMC and business entities. Unlike other tools, the economic mechanisms are focused more on the financial and economic sphere, where private initiatives and business relations play an active part. Despite this, one of the conditions for economic instruments development is interaction between the structures of the complex and business entities. As experience shows, contacts between these parties are fragmentary and situational. As a result of objective reasons, business structures do not recognize for themselves in their interaction and long-term acceptable relations with the structures of the complex.

It is important to focus on the temporal characteristics of the process while investigating the peculiarities of economic tools WMC functioning: under stable conditions incentive factors are formed to influence the use of mechanisms, while in crisis conditions, adverse factors are

formed that constrain and reduce the possibilities of use and implementation. In regard to this, it should be noted that many scientists consider the crisis situations in terms of the hidden (latent) opportunities that can be updated during the period of instability and shifts. And this concerns not only the sphere of water resources, but also the national economy in general. For example, in the research [16] it is noted that the qualitative opportunities for the economy development are possible namely in crises. The team of the researchers in economic theory [14], as well as experts from the Institute of Politics [11] have similar point of view.

After gaining its independence Ukraine passed both periods of stability and crises. The crisis ages were determined mainly by political and economic processes both within the state itself and outside its territory (world crisis phenomena). Interchanging with each other these periods form the background on which the water complex develops. These processes and features have a direct impact on the use of economic tools for the WMC functioning.

It can be assumed, that any crisis period underestimates significantly the possibility of applying economic mechanisms. In this case, it is important to note that not only low performance of the complex but also an unfavorable internal situation in the state minimize the use of tools. As a consequence of these processes, the quantitative indicators of the economic mechanisms usage may fall.

While speaking about the positive crises impact on the tools, we can underline specific points and separate favorable effects. For example, it is likely that the improvement of state's structure to

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maintain the complex (minimizing secondary costs, improving operational response) will take place. The investment expenditures structure for maintaining the complex's operation also changes under greater emphasis on local initiatives (rather than waiting for revenues from central authorities). It is also possible to get involved to the action tools, the use of which was not relevant under stable conditions.

Conclusions

The reported economic tools study of the water management complex development indicates that among all economic mechanisms the conservative mechanisms are used in approximately 90% of the possible means regulating WMC activities.

WMC is mainly determined by the state support orientation, since with the government's help it is possible to ensure the basic functioning of the water complex.

Innovative tools are mostly focused on the private capital participation, however, they require a specific, formed institutional environment.

It is important to consolidate the achievements that were formed in the conditions of instability and prolong their action and for stable periods after the crisis. Therefore, in the post-crisis stage, it is possible to use well-balanced both the previous mechanisms and consolidate the positive developments of the crisis.

Introduction of such tools contributes to the significant financial flows creation for the water complex.

Different factors that form the boundaries of the "field of activity" influence economic tools in their development and utilization. These aspects determine the "scope (range) of activity" of a particular economic mechanism.

At the same time, in stable periods and crisis the qualitative and quantitative parameters of the water complex development and the use of economic mechanisms for its functioning affect

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