REQUIREMENTS OF UKRAINIAN AND EU LEGISLATION ON WATER AND WASTEWATER IN THE FOOD INDUSTRY

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Food processing enterprises are characterized by significant water consumption and, consequently, the generation of substantial volumes of industrial wastewater. In Ukraine, the legal governance of water use and wastewater management - collectively termed "water relations" - is subject to both water and environmental legislation. Within the strategic context of Ukraine's integration into the EU, it is imperative to evaluate the convergence of the national regulatory framework with EU directives. This involves examining specific legal nuances, the clarity of control mechanisms, and the efficacy of the sanctions regime. This article provides a comprehensive comparative analysis of Ukrainian and EU legislative requirements concerning the safety and quality of drinking water, alongside the specific regulations governing water utilization within the food industry. The findings indicate that while primary Ukrainian regulatory acts have been largely harmonized with EU standards, secondary legislation remains under systematic revision. The study underscores the necessity of implementing a risk-based approach across the regulatory spectrum. Currently, the paramount challenge lies in the effective practical execution of these harmonized regulations and ensuring corporate compliance with the newly approved standards. The second part of the research analyzes Ukrainian and EU standards regarding industrial wastewater discharge from food processing facilities. The analysis reveals that while legal harmonization in the wastewater sector has achieved a high degree of maturity - evidenced by the adoption of specialized laws on wastewater, comprehensive bylaws, and legislation on integrated environmental permits - practical implementation faces significant impediments. Factors such as outdated infrastructure, the ongoing impact of the war, insufficient capital investment, and inadequate monitoring systems continue to hinder the achievement of the environmental benchmarks mandated by the EU acquis.

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1. Introduction

Over the past decade, Ukraine has been on the path of reforming its food industry to become more efficient, sustainable, and in line with modern international requirements. Integration into the European Union (EU) has become one of the key processes that defines the national concept of transformation of the industry. The Ukrainian government has also begun to examine its needs to meet the requirements of the EU acquis, a set of common rights and obligations that constitute the body of EU law and are incorporated into the legal systems of all EU members. This process is extremely relevant, as processed food is the third largest export commodity after

metals and grains, and most of it is sold to EU countries [1-3].

However, the food industry faces certain challenges along the way. An important task is not only to harmonize Ukrainian and European legislation in the field of food safety and environmental protection, but also to create sustainable institutional, technical and economic preconditions for the proper implementation of the adopted norms. The formal approximation of legislation to EU requirements should be accompanied by the development of control infrastructure, laboratory facilities, monitoring systems, and training of specialists capable of ensuring the practical implementation of the legislation. Only by combining regulatory alignment with an effective implementation mechanism can real improvements in environmental conditions, higher levels of food safety, and increased consumer trust in Ukrainian products on both domestic and international markets be achieved.

In this context, the issues of rational water use and wastewater management in the food industry are of particular importance. Water consumption and wastewater generation lie at the intersection of food and environmental legislation, which combines requirements for food safety, industrial hygiene, pollution control and water conservation. In Ukraine, activities related to the use of water and wastewater production, and in general, "water" relations, are regulated by both water legislation (the Water Code of Ukraine [4]) and environmental legislation (the Law on Environmental Protection [5]).

Food processing companies have significant water consumption and, consequently, wastewater generation. For example, the average water consumption rate at Ukrainian dairy processing plants is 4 l of water per 1 kg of processed milk, while in the US, for example, this figure is from 1 to 2 l of water per 1 kg of processed milk. Drinking water quality is a key component of food safety, particularly in the dairy industry. Efficient wastewater management is a key element of sustainable production in the food industry, as it directly affects compliance with environmental standards and sanitary and hygienic norms. Compliance with these requirements not only ensures environmental protection but also increases the competitiveness of Ukrainian producers in the European market.

The purpose of this **paper** is to review the harmonization of Ukrainian legislation with EU law in the field of drinking water and wastewater management, in particular with regard to the requirements for food processing companies, and to analyze the degree of readiness of the national regulatory framework for the practical implementation of European standards.

1. Analysis of the harmonization of Ukrainian and European food legislation regarding the requirements for the use of water at food industry enterprises.

The requirements of European legislation on the quality of drinking water are determined by Directive (EU) 2020/2184 of the European Parliament and of the Council of December 16, 2020, on the quality of water intended for human consumption [6]. Unlike a resolution or decision (direct action instruments), a directive is implemented through national legislation. This obliges Ukraine, in accordance with the Association Agreement [7], to take measures aimed at achieving the goals set out in it. These

measures became part of the Action Plan for the Implementation of the Association Agreement [8].

The drinking water quality system is part of the EU water policy described in the Water Framework Directive [9], which defines the legal framework for the EU's policy on water protection and management and is closely linked to The European Green Deal and action plans on the circular economy, zero pollution, etc.

Other normative documents in the EU are the Codex Alimentarius - water quality standards for the food industry [10] and the WHO Guidelines for Drinking-water Quality [11].

In Ukraine, the requirements for drinking water quality are set out in:

- The Law of Ukraine "On Drinking Water and Drinking Water Supply" [12];
- State Sanitary Norms and Regulations "Hygienic Requirements for Drinking Water Intended for Human Consumption" - DSanPiN 2.2.4-171-10 [13];
- State Standard DSTU 7525:2014 "Drinking water. General requirements and methods of quality control" [14].

Regulatory documents are harmonized among themselves and provide for:

- adoption of national legislation and determination of the authorized body/s;
- establishment of European standards for drinking water;
- creation of a European monitoring system;
- creation of a mechanism for providing information to consumers.

In turn, the Action Plan [8] provides for the implementation of legislative support for the EU requirements for the content of substances and microorganisms in drinking water and the creation of a drinking water quality monitoring system.

The requirements of the legislation on drinking water quality are not applied to water:

- intended exclusively for those purposes for which the executive body implementing the state policy in the field of sanitary legislation considers that their quality does not have a direct or indirect impact on the health of consumers;
- natural minerals, which are recognized as such by the central executive body that forms and ensures the implementation of the state policy in the field of healthcare;
- that are medicinal products within the meaning of Article 2 of the Law of Ukraine "On Medicinal Products"[15];
- intended for special dietary consumption, specially processed or designed to meet the dietary needs of infants and young children;
- intended for personal use from individual sources,
- with a capacity of less than 10 m^3per day on average or used by less than 50 people, if this drinking water is not supplied for commercial purposes or for public use.

At the same time, consumers of such drinking water should be informed about the Action Plan and about the measures that can be taken to protect their health in case of drinking water contamination. In addition, when a potential threat to human health due to inadequate drinking water quality becomes evident, the executive authority responsible for implementing state policy in the field of sanitary legislation must immediately provide appropriate advice to the consumers of that water.

Regarding the specifics of water quality requirements in the legislation of Ukraine on food safety and some food quality indicators,

according to the Law of Ukraine "On Basic Principles and Requirements for Food Safety and Quality" [16]:

- food business operators shall comply with the following water supply requirements;
- ensuring the supply of drinking water at the facilities in the amount that corresponds to the size and type of the technological processes;
- clean water can be used for processing fishery products with unchanged integrity, as well as for external washing. Seawater may be used for the treatment of live bivalves, needlefish, shellfish and marine gastropods. In such cases, the facility must be designed and equipped to allow for the supply of such water;
- circulation of non-potable water used in fire extinguishing systems, steam production, freezing and other purposes shall be carried out by a separate clearly identified water supply network. It is prohibited to connect any non-potable water supply system with a water supply system through which potable water is circulated;
- water used in the production of food products (in the technological process and/or as an ingredient) must meet the requirements established for drinking water;
- ice that comes into contact with food and may cause food contamination shall be made from drinking water or, if it is used to cool fishery products that do not change their integrity, from pure water. Ice is manufactured, maintained and stored under conditions that protect it from contamination;
- steam that comes into direct contact with food must be free of any substances that are hazardous to human health or may cause food contamination;
- in the case of heat treatment of food products in sealed containers, the food business operators shall ensure that the water used to cool these containers is not a source of contamination of these products.

According to the Order of the Ministry of Agrarian Policy and Food of Ukraine No. 590 dated 01.10.2012 "On Approval of the Requirements for Development, Implementation and Application of Permanent Procedures Based on the Principles of the HACCP System" (HACCP - Hazard Analysis and Critical Control Points) [17]:

- water at food production facilities that is an ingredient for food and that may directly or indirectly come into contact with food, water intended for ice production, as well as return water, if used in the technological process, must meet the requirements for drinking water;
- an exception to the use of water that does not meet the appropriate quality may be water intended for firefighting, or steam intended for technical purposes, or water used for certain types of processes (e.g. cooling) and for processes that do not pose a threat to food safety and compliance (e.g. seawater).

For dairy industry, it can be stated that water is used at enterprises for washing equipment, in technological processes (breeding, cooling) and for personnel hygiene. State sanitary rules for dairy processing enterprises stipulate that water used in technological processes must meet the requirements for drinking water in terms of physical, chemical and microbiological indicators. This includes the absence of pathogenic microorganisms, permissible levels of total hardness, iron, nitrates and other indicators. The presence of even minor deviations in water quality can lead to bacterial contamination of products, deviations in taste characteristics and non-compliance with international standards (DSTU ISO 22000:2019 "Food safety management

systems. Requirements for any organization in the food chain" [18], DSTU ISO 9001:2015 "Quality management systems. Requirements" [19], HACCP [17]).

2. Analysis of the harmonization of Ukrainian and European food legislation on requirements for wastewater at food industry enterprises.

The food industry is one of the most intensive water users in Ukraine. Enterprises in the dairy, meat and fish processing, and sugar and beverage sectors generate significant volumes of wastewater with high biochemical (BOD) and chemical oxygen demand (COD), high levels of fats, proteins, salts, and detergents and disinfectants. The conditions of European integration and Ukraine's aspirations for full membership in the EU require that national legislation on wastewater disposal and treatment be brought into line with EU directives. This is important not only for environmental protection, but also for the preparation of processing enterprises in accordance with EU legislation. This is stipulated in the sixth chapter of the EU-Ukraine Association Agreement, Environment, which contains the main provisions on environmental integration.

The EU legal framework in the field of wastewater management is determined by the following directives:

1) Water Framework Directive 2000/60/EC [20] establishes the EU's common policy on water management, introduces the basin management principle and the concept of "good ecological status" of surface and groundwater.

2) Directive 2007/60/EC of the European Parliament and of the Council of October 23, 2007 [21] on the assessment and management of flood risks. The Directive establishes a common framework for the assessment and management of flood risks in the EU Member States: states must carry out a preliminary flood risk assessment, identify areas of potentially significant risk, draw up hazard and risk maps and develop flood risk management plans.

Given that food production is sensitive to interruptions in water supply, pollution of wastewater or damage to infrastructure, the application of the directive's provisions helps to guarantee sustainable operation, minimize product losses and protect logistics. The company should analyze whether its facility is located in an area of "potentially significant flood risk" and, if so, coordinate with local flood risk management authorities, coordinate drainage/treatment infrastructure, and take into account the relevant requirements when designing or modernizing.

3) Council Directive 91/271/EEC [22] on the treatment of urban wastewater sets out general rules for the collection, treatment and discharge of urban wastewater, as well as wastewater from certain industries. Its main objective is to protect the environment from the negative impact of insufficiently treated wastewater: preventing pollution of rivers, lakes, estuaries and coastal sea waters, including eutrophication, reduction of oxygen content, etc.

The Directive introduces the obligation of Member States to provide agglomerations (settlements/groups thereof) with sewage systems and treatment facilities, with the level and timing of treatment depending on the "population equivalent" (p.e.) - the load of biodegradable organic matter with a five-day biochemical oxygen demand ($BOD_{5)}$ equal to 60 g/day of oxygen and the sensitivity of the

receiving waters. For most agglomerations, at least secondary (biological) treatment is required, while for "sensitive areas" more thorough treatment with nitrogen and/or phosphorus removal is required. For less vulnerable marine zones, a somewhat simplified treatment is allowed, provided that there is no proven environmental damage.

A separate set of provisions applies to industrial wastewater. If they are discharged into municipal sewers, rules and/or special permits must be in place to ensure pre-treatment, protection of networks and treatment facili ties, safe disposal of sludge, and no harm to aquatic ecosystems. For industrial enterprises with biodegradable wastewater discharged directly into water bodies (without passing through a municipal wastewater treatment plant), the directive sets out specific requirements, including for the food industry. It also provides for mandatory monitoring of wastewater and water bodies, sediment control, public awareness, and preparation of national implementation programs.

Any wastewater from facilities used for production or trade is considered as industrial wastewater. If such facilities discharge to the municipal sewerage system, they are subject to regulations or special permits. These regulations must ensure that the wastewater is treated to the extent that it do not endanger sewer workers, destroy equipment, disrupt the operation of treatment plants, degrade the quality of receiving waters, or make sludge disposal unsafe.

If industrial wastewater does not go to municipal wastewater treatment plants but is discharged directly into water bodies, the directive identifies a group of industrial sectors with biodegradable wastewater for which specific requirements are set. These include typical sectors of the food industry: processing of milk, meat, fish, fruit and vegetable products, production of beverages, beer, alcohol, feed, gelatin, malt, etc. For plants with a load of more than 4000 p.e., Member States should set discharge requirements through regulations/permits (BOD, COD, solids, nutrients), and such requirements should guarantee environmental protection, especially in regions vulnerable to eutrophication.

Thus, the directive sets out obligations for food companies: if discharged into municipal sewage, they must comply with the conditions of acceptance and pre-treatment; if discharged directly into a water body, the company falls under a special regime for biodegradable industrial wastewater and must comply with the established standards. In any case, Member States are obliged to control such discharges, implement pollution reduction programs and transparently inform the public.

4) Directive 2010/75/EU [22] establishes general rules for industrial activities that generate pollution, introducing the requirement of an integrated approach - facilities must obtain permits, take into account emissions to air, water and soil, as well as waste management and the use of the best available techniques (BAT) to achieve a high level of environmental protection. Best available techniques are "the most efficient and up-to-date stage in the development of activities and methods of their implementation, which demonstrates the practicality of certain techniques to provide a basis for the value of emission limit values and other permit conditions designed to prevent emissions and environmental impacts in general and, if this is not practicable, to reduce them."

The Directive clearly stipulates that the permit for a facility must include conditions

relating to emissions to water or wastewater discharges (or equivalent parameters) based on the application of BAT and monitoring of these discharges. The directive also obliges Member States to ensure that wastewater discharges are limited to levels that are in line with BAT levels or that, for large facilities with significant water impacts, regular monitoring is carried out and permits are reviewed in the event of technological changes or the emergence of new techniques. In addition, the directive recognizes that wastewater is part of "pollution arising from industrial activities" and therefore includes in its scope measures for discharges to water, treatment and monitoring to avoid the transfer of pollution between environmental components (e.g. from air or soil to water).

For food processing establishments (dairies, meat processing plants, fish processing, beverage production, etc.), the directive means that if their production activities fall under the criteria of large facilities or have a significant impact on the environment, they must obtain an integrated permit with conditions that cover wastewater discharges. This includes setting limits for water discharges, application of wastewater treatment technologies (e.g., preliminary and primary treatment, grease traps, biological treatment), monitoring and reporting on the quality of discharges. In addition, the food company should take into account that the markup for BAT technologies, modernization of treatment facilities and monitoring systems is not only an environmental requirement, but also an element of competitiveness, especially if the products are intended for export to the EU.

5) Council Directive 91/676/EEC [23] on the protection of waters against pollution caused by nitrates from agricultural sources establishes a system of measures aimed at protecting surface and groundwater from pollution by nitrates originating from agricultural activities. It obliges Member States to identify "nitrate-prone areas", develop and implement codes of good agricultural practice, and set restrictions on the use of fertilizers and the management of organic fertilizers in order to minimize the flow of nitrogen into water bodies.

This Directive relates directly to agricultural activities, but is important for the food processing industry in terms of the functioning of the raw material base: dairy, meat, and processing enterprises are often integrated with livestock farming or cooperate with agricultural producers. When areas vulnerable to (accumulation of) nitrates are identified, it will be necessary to introduce stricter requirements for the storage of organic fertilizers and restrictions on nitrogen removal, which will affect the activities of all participants in the food chain.

6) EU Regulations No. 852/2004 [24] and No. 853/2004 (Food Hygiene) [25] stipulate that operators of food facilities must have adequate water supply and sewage systems that prevent cross-contamination of food.

Thus, the main principles of regulation in the EU are:

- The "polluter pays" principle, i.e., companies independently finance measures to prevent and treat emissions/wastewater in accordance with the terms of permits;

- mandatory pre-treatment of industrial wastewater;

- monitoring and reporting on the quality of discharges;

- implementation of BAT technologies to minimize the environmental impact;

- a basin approach to water resources management.

What has already been done in Ukraine? In 2017 Ukraine adopted the Resolution "On Approval of the Procedure for Developing a River Basin Management Plan" [26], a key document for systematic water resources protection. Ukraine has committed to implementing integrated water resources management, including surface and groundwater, as part of its adaptation to the EU Water Framework Directive. To support this, in 2019, the Ministry of Environmental Protection approved a methodology for identifying water bodies - sections of river basins that should be assessed separately. This allowed for more targeted monitoring and better response to risks.

The Law of Ukraine "On Water Disposal and Wastewater Treatment" No. 2887-IX of 12.01.2023 [27] is a key step for Ukraine towards the implementation of Directive 91/271/EEC. The document defines the legal, economic, and organizational framework for the functioning of the wastewater system aimed at creating favorable conditions for human life and protecting the environment from the negative impact of wastewater. According to this law, 5 regulatory acts were approved and the Law of Ukraine "On Drinking Water and Drinking Water Supply" was amended [12].

The regulatory acts approved within the framework of European integration processes include:

1) Resolution of the Cabinet of Ministers of Ukraine No. 61 of January 21, 2025 "On Approval of the Procedure for State Monitoring in the Fields of Drinking Water and Drinking Water Supply and Sewerage" [28]. The document defines a unified system of state monitoring of drinking water quality, functioning of water supply and sewage networks. It requires operators and local governments to regularly submit data on the quality, volume and technical condition of the systems. The Procedure enshrines the integration of monitoring into the national information system with the results displayed in the public domain. Particular attention is paid to the parameters of wastewater treatment and the prevention of pollutants from entering water bodies. The implementation of the resolution creates a basis for a systematic analysis of the efficiency of water supply and wastewater treatment in Ukraine.

2) Order of the Ministry of Infrastructure of 17.07.2024 No. 643 "On Approval of the Procedure for Initial Accounting of the Volumes of Wastewater Sludge Generation, Treatment, Storage and Reuse" [29]. It defines the mandatory forms of primary accounting of sludge generated at sewage treatment plants and the procedure for documenting them. Establishes requirements for keeping logbooks, certification of sludge and control over its storage, transportation and reuse. It introduces a transparent reporting system for wastewater operators. The procedure is aimed at reducing the risks of secondary pollution of soil and water bodies. It also opens up the possibility of further use of sludge in agriculture, subject to compliance with sanitary standards.

3) Resolution of the Cabinet of Ministers of Ukraine No. 548 of May 14, 2024 "On Approval of the Procedure for Assessing the State of Wastewater Disposal and Treatment" [30]. The Resolution establishes a mechanism for periodic state assessment of the effectiveness of wastewater disposal and treatment systems. It defines the assessment criteria - the technical condition of the networks, the degree of treatment, compliance

with discharge standards, and the level of environmental risks. The document contains a standard form of an assessment report to be drawn up by authorized bodies. Based on the results of the assessment, recommendations for infrastructure modernization or restoration are made. The procedure helps to create a unified database for making management decisions and planning investments in the sector.

4) Order of the Ministry of Infrastructure of 12.04.2024 No. 309 "On Approval of the Procedure for the Development of Technological Regulations by Centralized Water Supply and Centralized Wastewater Treatment Companies" [31]. The document obliges operators of water supply and sewage systems to develop technological regulations that describe all processes of water treatment, transportation and quality control. The regulations must include process parameters, permissible deviation limits, and emergency response procedures. Requirements for approval and periodic review of regulations are also defined. This helps to unify technical standards, improve quality management and system safety. The implementation of regulations increases the controllability of technological processes and reduces the risk of accidental pollution.

5) Resolution of the Cabinet of Ministers of Ukraine dated 29.03.2024 No. 364 "On Approval of the Procedure for Developing the Standards for Maximum Permissible Discharge (MPD) of Pollutants into Centralized Wastewater Systems and the List of Pollutants whose Discharge into Centralized Wastewater Systems is Regulated" [32]. This document defines how enterprises should develop and approve individual MPC standards for wastewater discharges to municipal networks. It establishes a list of the main pollutants (organics, fats, oil products, metals, etc.) and rules for their standardization.

According to this Resolution, the maximum concentrations (mg/dm^3) of pollutants in wastewater that may be discharged to treatment facilities are as follows:

- Biochemical oxygen demand (BOD) (total oxidation) 555;
- Chemical oxygen demand (COD) 580;
- Suspended solids and floating solids 433;
- Organic and ammonium nitrogen 73;
- Ammonium nitrogen 53;
- Total phosphorus 12;
- Phosphorus phosphate 10;
- Chlorides (in addition to the content in drinking water) 60;
- Biologically stable synthetic surfactants (BSS) 17.

The procedure details the procedure for calculating, approving and periodically reviewing the standards. The responsibility for exceeding the MPCs lies with the polluting enterprises, which is in line with the "polluter pays" principle. The document is a key tool for harmonizing the Ukrainian wastewater system with Directive 91/271/EEC on urban wastewater treatment.

6) "Rules for Acceptance of Wastewater to Centralized Sewerage Systems", approved by Order No. 316 of the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine of December 01, 2017 [33]. In 2023, the Rules were amended [34]. Appendix 1 of the Rules sets out a list of production processes in which the consumer must have local wastewater treatment facilities for preliminary treatment of wastewater before discharging it to the centralized wastewater disposal and treatment system. Alcohol, yeast, confectionery, starch

and molasses production, butter production, production of non-alcoholic beer (including malt beer), processing of milk, fish, meat (including slaughterhouses), fruits and vegetables are among such processes. Annex 4 of the Rules sets out the requirements for the composition and properties of wastewater discharged to the centralized sewage system for its safe disposal and treatment at the treatment facilities of the centralized sewage system. Local authorities may additionally set their own standards.

As the analysis shows, the implementation of Council Directive 91/676/EEC on the protection of waters against pollution by nitrates from agricultural sources (Nitrate Directive) is one of Ukraine's obligations under the Association Agreement with the EU. Currently, the process of legislative approximation is ongoing, but remains incomplete. In particular, Ukraine has not yet identified nitrate vulnerable zones in accordance with the European methodology, there are no approved action programs for such areas, and the system for monitoring the quality of surface and groundwater still needs technical and regulatory improvement [2]. The existing requirements for the management of organic and mineral fertilizers are partially in line with EU standards, but require systematic implementation and effective state control. Consequently, the implementation of the Nitrate Directive in Ukraine is lagging behind the original deadlines and requires further steps to reduce the flow of nitrogen compounds into water bodies, which is important in the context of environmental protection and fulfillment of environmental obligations in the field of European integration.

What are the practical implications of the harmonization of Ukrainian and European wastewater legislation for Ukrainian food companies? Enterprises must obtain integrated permits with environmental monitoring, implement BAT technologies (anaerobic bioreactors, biofilters, purified water reuse systems), report to state control authorities, and integrate water supply and sewage control into the food safety and quality management system. Small producers are obliged to install local treatment systems (grease traps, sedimentation tanks) and conduct regular laboratory monitoring of wastewater composition.

At the same time, meeting these requirements is associated with challenges such as the high cost of modernization (from 50 to 300 thousand euros), the need for staff training and consulting support, and the lack of standard design solutions for small businesses.

At the same time, companies can gain benefits such as water savings through the use of recycled water, better opportunities to export products to EU countries, and be prepared for certification under international standards such as ISO 14001 or EMAS (European Environmental Management and Audit Scheme).

Conclusions

1. The process of implementing the requirements of the EU acquis, i.e., the set of common rights and obligations that constitute the body of EU law and are incorporated into the legal systems of all EU members, is extremely relevant for the food industry, since food products are Ukraine's third-largest export.

2. Ukraine's existing key water-related regulations are harmonized with the relevant EU legislation, and other documents are undergoing revision and harmonization. It is important to systematically implement a risk-based approach to the regulatory framework.

Today, the main task is to ensure proper implementation of harmonized regulations and the activities of dairy processors in accordance with the approved agreed documents.

3. Regulatory and legal harmonization in the wastewater sector is at a fairly high level in Ukraine: a special law on wastewater, comprehensive bylaws, a law on integrated permits, and amendments to the Water Code have been adopted. Practical implementation is a challenge due to outdated infrastructure, war, lack of investment, and monitoring.

4. The introduction of a systematic monitoring system for drinking water quality, characteristics of production wastewater, as well as receiving water bodies, will make it possible to obtain evidence of the degree of legislation implementation and the effectiveness of investments. This also requires standardized sampling and analysis protocols, adequate laboratory infrastructure, and regular evaluation of the monitoring results.

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ВИМОГИ ЗАКОНОДАВСТВА УКРАЇНИ І ЄС ЩОДО ВОДИ ТА СТІЧНИХ ВОД У ХАРЧОВІЙ ПРОМИСЛОВОСТІ

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Підприємства харчової промисловості мають значні обсяги водокористування, та, як наслідок, об'єми промислових стічних вод. В Україні діяльність, що пов'язана з використанням води і продукуванням стічних вод - «водні» відносини - регулюються як водним, так і екологічним законодавством. У стратегічному контексті інтеграції України до ЄС вкрай важливо оцінити відповідність національної нормативно-правової бази до директив ЄС. Це включає вивчення конкретних правових нюансів, чіткості механізмів контролю та ефективності режиму санкцій. Здійснено порівняльний аналіз вимог українського та європейського законодавства щодо безпечності і якості питної, а також конкретних нормативних актів, що регулюють використання води в харчовій промисловості. Результати дослідження свідчать про те, що хоча первинні нормативно-правові акти України значною мірою гармонізовані зі стандартами ЄС, вторинне законодавство все ще перебуває під систематичним переглядом. Дослідження підкреслює необхідність впровадження ризик-орієнтованого підходу в усьому спектрі нормативно-правового регулювання. Наразі першочерговим завданням є ефективне практичне виконання цих гармонізованих нормативних актів та забезпечення корпоративного дотримання нещодавно затверджених стандартів. У другій частині дослідження аналізуються українські та європейські стандарти щодо скидання промислових стічних вод на харчових підприємствах. Аналіз показує, що хоча правова гармонізація у секторі водовідведення досягла високого ступеня зрілості, що підтверджується прийняттям спеціалізованих законів про стічні води, комплексних підзаконних актів та законодавства про комплексні екологічні дозволи, практичне впровадження стикається зі значними перешкодами. Такі фактори, як застаріла інфраструктура, постійний вплив війни, недостатні капіталовкладення та неадекватні системи моніторингу, продовжують перешкоджати досягненню екологічних контрольних показників, передбачених нормативами ЄС.

Ключові слова: *вода, гармонізація, довкілля, законодавство, стічні води, харчова промисловість.*