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LOGISTICS OF DRINKING WATER SUPPLY OF MILITARY UNITS AND SUB-UNITS OF THE NATIONAL GUARD OF UKRAINE: STATUS AND DIRECTIONS OF DEVELOPMENT

An analysis of the logistics of drinking water supply of military units and subdivisions of the National Guard of Ukraine was conducted, effective solutions implemented in the National Guard in recent years were shown, and problematic issues that have become relevant today in the processes of providing military personnel with drinking water were identified. Directions for further development of the logistics of drinking water supply of the National Guard of Ukraine were identified.

Keywords: *water, drinking water quality, water supply, bottled drinking water, logistics, field conditions, water delivery, echeloning.*

Statement of the problem. Water is an extremely important resource for the military sphere of activity, in fact, as for any other. Without water, it is impossible to carry out most technological processes and operations at military facilities and, in general, the vital activity of a military unit in any aspect is impossible. However, the main thing is that water is a vital resource for military personnel. According to military experts of the armies of NATO member states, water is one of the most important logistics products necessary to support military operations [1, 2, 3].

The role and importance of water for humans are quite obvious and well-studied. In the event of a lack of water, the human body loses not only its working capacity (combat capability) but also its vitality in a short period of time (several days). Thirst is a kind of indicator of the body's need for water. As is known, severe thirst and discomfort begin with a water deficit of 2 % [2]. Loss of 10 % of water by the body leads to metabolic disorders, and 20 – 22 % leads to death [3]. According to experts, the physiological need for water in a person is about 2.5-3 l/day. The main part (1.0-1.5 l) is satisfied by direct consumption of drinking water. With food, an additional 1.0-1.2 l of water enters the body, and about 0.5 l is formed in the human body as a result of the oxidation of nutrients. The amount of water that a person actually consumes over a certain period of time (day) is not a single value. Fluctuations in the need for drinking water are due to both the characteristics of the body (age, gender, body weight, general health of a person) and external factors (air temperature, humidity, etc.). The nature and conditions of work, the level of physical and psycho-emotional stress significantly affect a person's need for water. The working conditions of military personnel during the performance of service-combat, combat and special tasks, of course, cannot be defined unambiguously and attributed to a certain class of the general classification [4]. They are largely situational and can vary significantly depending on the type of tasks, the conditions of the units, and the tactical situation. At the same time, taking into account practical and combat experience and taking into account the hygienic classification of working conditions [4], they can be identified simultaneously as difficult, especially harmful and as work of a special nature. Understanding the working conditions of military personnel while performing assigned tasks is important from the point of view of water quantity rationing, since there is a correlation between working conditions and the amount of water consumed by a person. It is, of course, impractical to make adjustments to the norms for providing drinking water for each factor. However, with regard to the most significant factors, such adjustments are extremely appropriate and necessary. It is important to remember that several factors can act simultaneously, which causes a multiplicative effect on the need for water for military personnel.

Quantitative indicators of the planned provision of drinking water and water for other needs for military personnel are determined by the standards for provision [5, 6] .

No less important for military personnel are the quality indicators of drinking water. As is known, pure water does not exist in nature. It is a universal solvent. In this regard, the chemical composition of natural water varies depending on the conditions of occurrence, location and other circumstances. In addition, it is a favorable environment for the development of various microorganisms. Therefore, the composition of natural water, along with the "pure water" itself, also includes various chemical impurities, microorganisms and physical micro-objects that can pollute and, at certain concentrations, make it unsuitable for direct consumption. It is obvious that when drinking water, everything that is in it enters the human body. The chemical and microbiological composition of water directly affects the health of the population [7].

In general, the issue of drinking water quality in Ukraine is given great attention at the national level. According to experts, the problem of drinking water quality for Ukraine has been and remains extremely relevant and extremely acute. At the same time, the global water crisis is accelerating [8]. The reasons for this state of affairs are due to significant pollution of river basins and other sources of natural water. The quality of water supplied to consumers is significantly affected by the deterioration of engineering networks of centralized water supply and wastewater treatment systems in most regions of Ukraine [8]. Enormous damage to the waters of Ukraine has been caused by Russian aggression: the Kakhovka reservoir has been destroyed; water supply, wastewater treatment and treatment facilities in places of military operations and missile attacks have been destroyed; a large number of harmful substances have directly and indirectly (through other recipients of influence) entered the water. According to the Ministry of Environmental Protection and Natural Resources of Ukraine, as of the beginning of 2025. The damage caused directly by the war to Ukraine's water resources is over UAH 104 billion. [9] All this leads to a growing shortage of clean fresh drinking water and disruption of sustainable centralized water supply.

The problematic issues of drinking water supply that occur in Ukraine also concern the National Guard of Ukraine (NGU), since the military units of the NGU are consumers of water. Taking into account the multivariate conditions of deployment of military units (subunits) of the National Guard of Ukraine [stationary military camps, places of temporary stay (dispersion), field camps, combat positions, mobile vehicles], trends in the deterioration of the quality of natural water, the state of the drinking water infrastructure, etc., the process of providing troops with drinking water is multi-vector and requires daily work of relevant officials and services of the military unit, improvement and further development of the existing logistics of drinking water supply, which, in turn, requires conducting relevant theoretical research.

Analysis of recent research and publications. The issues of reliable water supply, ensuring proper quality of drinking water in scientific research and publications in recent years have received great attention. Traditionally, the analysis of the quality of drinking water, the state of drinking water supply and wastewater disposal in Ukraine is disclosed in the annual National Report [8]. Taking into account the complexity and scale of the problems caused by the water crisis that our country has faced, experts are investigating various aspects of its solution: economic [1, 10, 11, 12], environmental [8, 10, 13], organizational and technical [14]. The pollution of Ukraine's water resources caused by the russian-ukrainian war is analyzed [13].

Much attention is paid to the issues of providing drinking water to military formations [15–18]. The relevance of these issues is due to both the general problems of drinking water supply in Ukraine and the experience of various periods of modern war, in particular the period after the full-scale russian invasion of Ukraine on February 24, 2022. The experience of field water supply of the armies of NATO member states is being actively studied. The impact of the nature of the tasks performed by military personnel on the daily needs of water consumption and drinking regime is being studied [19]. Questions are raised about the feasibility of revising the existing norms of drinking water supply in the direction of their increase, as well as the technical re-equipment of field water supply units [3].

An important area of research is the logistics of water supply of military units [1, 12, 17]. Thus, in the article [1], options for providing drinking water to NGU units performing assigned tasks outside the permanent deployment points were considered, and

the theoretical foundations of the methodology for substantiating the optimal supply plan were developed. At the same time, not enough attention is paid to systematic research on drinking water supply, searching for ways to further develop the logistics of water supply of NGU military units.

The purpose of the article is to analyze the logistics of drinking water supply to military units and subdivisions of the National Guard of Ukraine and determine relevant directions for its further development.

Summary of the main material. Military units and subdivisions of the National Guard of Ukraine are deployed on the territory of the state in accordance with the zones of responsibility (operational response), the deployment of protected objects, and the places of performance of service and combat tasks [20]. In any place of deployment and under any conditions, they must be provided with drinking water in a timely manner in the required quantity and proper quality. Accordingly, the logistics of drinking water supply must be built. The logistics of drinking water supply includes a set of processes for planning and implementing the provision of troops with drinking water. Logistic processes are carried out in accordance with the requirements of governing documents, the decision of the commander of the military unit and the instructions of the highest military HQ [21]. During the performance of tasks of providing military units of the National Guard of Ukraine with water, the logistics management bodies of the National Guard of Ukraine and military units enter into relations with various entities. These relations are based on the requirements of the Laws of Ukraine and subordinate regulatory legal acts. The list of main regulatory legal acts and the nature of their impact on the logistics of drinking water supply of the NGU is presented in Table 1.

Table 1 – List and general characteristics of regulatory legal acts that determine the logistics of providing military units with drinking water

Document name	Nature of impact on logistics drinking water supply National Guard of Ukraine
Laws of Ukraine	
Water Code of Ukraine dated 06.06.1995 No. 2013/95-VR	Direct: regulates public relations regarding the ownership, use and disposal of water bodies on the territory of the country
Law of Ukraine "On Drinking Water and Drinking Water Supply" dated 10.01.2002 No. 2918-III	Direct: defines the general conditions for ensuring a stable level of service to the population with drinking water of regulatory quality, improving the quality of services provided, the reliability of the functioning of water supply and wastewater systems, and preventing emergencies
Law of Ukraine "On Housing and Communal Services" dated 09.11.2017 No. 2189-VIII	Direct: regulates relations arising in the process of providing centralized water supply services to military units
Law of Ukraine "On Public Procurement" dated 25.12.2015 No. 922-VIII	Direct: establishes requirements for organizing the procurement of water for the needs of military units, technological equipment and other necessary means
Law of Ukraine "On the Statute of the Internal Service of the Armed Forces of Ukraine" dated 243.03.1999 No. 548-XIV	Direct: defines the responsibilities of military unit officials regarding water supply issues
National subordinate regulatory legal acts	
Order of the Ministry of Health of Ukraine "On Approval of State Sanitary Norms and Rules "Hygienic Requirements for Drinking Water Intended for Human Consumption"" dated 12.05.2010 No. 400	Direct: establishes requirements for the safety and quality of drinking water

End of table 1

Document name	Nature of impact on logistics drinking water supply National Guard of Ukraine
Resolution of the Cabinet of Ministers of Ukraine "On Nutrition Standards for Servicemen of the Armed Forces and Other Military Formations…" dated March 29, 2002 No. 426	Direct: establishes the norm for providing military personnel with drinking bottled water when in the field and while performing assigned tasks
Departmental subordinate regulations	
Order of the Commander of the National Guard of Ukraine "On approval of the Instructions for organizing accommodation, food, water supply, bath and laundry services for NGU personnel in field conditions" dated 05.08.2016 No. 499	Direct: establishes requirements for organizing water supply in field conditions
Order of the Ministry of Defense of Ukraine "Regulations on the military (ship) economy of the Armed Forces of Ukraine" dated July 16, 1997 No. 300	Direct: defines the duties of officials regarding the provision of water to military units; defines the organization of field water supply for troops
Combat charter "Logistics of the Ground Forces of the Armed Forces of Ukraine" (tactical level)	Directly related to military units (subdivisions) of the National Guard that perform combat (special) tasks to repel armed aggression against Ukraine as part of the joint forces: determines the organizational issues of supplying units with water in all types of combat operations
Combat charter of the Ground Forces of the Armed Forces of Ukraine "Operations for the deployment of troops" (tactical level)	Directly related to military units (subunits) of the National Guard performing combat (special) tasks to repel armed aggression against Ukraine as part of the joint forces: determines measures to provide military units (subunits) with water during preparation and during the operation to deploy troops
Combat charter "Logistics operations of the Ground Forces of the Armed Forces of Ukraine"	Directly related to military units (subdivisions) of the National Guard that perform combat (special) tasks to repel armed aggression against Ukraine as part of the joint forces: determines the organization of logistical support for a military unit (subunits) during preparation for combat operations and during various types of combat operations
Methodological recommendations on the organization and implementation of security and defense, daily activities of military units (subdivisions) of the Armed Forces of Ukraine located in base camps	Indirect: recommendations were provided on the organization and implementation of daily activities of military units (subunits) located in base camps, in particular on issues of food supply, including water

The overall responsibility for providing a military unit with water rests with its commander. The deputy commander from the rear is directly responsible for the water supply of a military unit in peacetime and wartime [22]. He is obliged to organize the supply of drinking water and ensure laboratory and production control of its quality in accordance with current state standards. At the same time, the processes of providing water to a military unit and units require the involvement of a wider range of officials and services. The distribution of functions between the services of a military unit in the water supply system is presented in Table 2.

Table 2 – Distribution of functions in the water supply system of a military unit (subunits) between services

Military service	Water supply functions
Food service	Determining the need for drinking water. Provision of drinking water. Accumulation and maintenance of bottled water stocks to established standards, their tiering. Issuance of bottled drinking water to units
Engineering service	Exploration of water sources in the field, as well as, if necessary, at permanent deployment points. Water extraction, purification, installation of water supply points using drilling rigs, water purification and desalination stations, equipment of water distribution points, provision of military units and subdivisions with means of water extraction and purification, as well as staff tanks for its storage and transportation
Medical service	Sanitary inspection of water supply sources; control over water supply. Assessment of the sanitary and epidemiological situation in the areas where water supply points and water collection points are located, medical control over the quality of water supplied for domestic and drinking needs, provision of units (parts) with individual means of water disinfection
Radiation, Chemical and Biological (RCB) Protection Service	Participation in the exploration of water sources and testing its quality
Housing and maintenance service	Determining the military unit's need for water supplied from a centralized network (purchased as a utility service). Determining water needs for domestic, economic and technical needs under centralized supply conditions (contract for water supply and wastewater services)
Car service	Transportation of water to a military unit, field camp, or designated point (according to transportation plans)
Financial and Economic Service	Agreement on the availability of funding. Verification of the correctness of financial calculations
Procurement service (person or unit responsible for procurement)	Organization of work on concluding and registering contracts, monitoring the implementation and storage of concluded contracts, agreements concluded by the General Directorate of the National Military University, the General Directorate of the Military University, and the military unit
Legal service	Legal support and ensuring legal regulation of relations between the supplier and the military unit. Implementation of measures aimed at fulfilling contractual obligations, ensuring the protection of the rights and legitimate interests of the unit

Logistic schemes for providing military units (subdivisions) of the National Guard with drinking water depend primarily on the available water sources in the places of deployment and its quality.

The traditional scheme for providing drinking water involves the use of a centralized water supply network. Military units receive water by purchasing it as a type of utility service. They conclude contracts for the provision of centralized water supply and centralized wastewater disposal services from a drinking water supply enterprise. A mandatory condition is that the quality of tap water meets the hygienic requirements for "drinking water intended for human consumption" [23]. Water is drawn from a centralized water supply network. The volume of water consumed is recorded using a meter that measures the flow of water directed through the water supply system at the entrance to the military camp. Through the corresponding elements of the engineering networks of the military unit, water is supplied to all military facilities where its presence is provided. This option is implemented, as a rule, during the presence of troops at points of permanent

deployment, in the case of temporary deployment of military units (subunits) in/near settlements where there is a centralized water supply network, as well as in field conditions if there is an appropriate network. However, this logistical scheme for drinking water supply to military units (subunits) of the National Guard currently has a number of significant shortcomings, the main ones being the following.

1. Low quality of water supplied through centralized networks. Water is taken from surface sources (river basins, lakes, reservoirs), most of which, in terms of the degree of contamination, are classified as polluted and highly polluted, which do not meet the requirements of sanitary legislation for sources of drinking water supply [8]. Of course, water is subject to purification, but its quality does not always meet the demands or needs.

2. The absence, as a rule, of a centralized water supply system in the areas where tasks are performed (in field conditions) as intended.

There is a need to diversify sources of drinking water supply. An alternative to water intake from surface sources is water intake from groundwater. Thus, the second scheme for providing military units with drinking water involves independent water intake from water intake (artesian) wells drilled on the territory of the military camp with its use as direct drinking water or after filtering (purification). In organizational terms, this logistical scheme requires a permit and license for the military unit to conduct the type of economic activity "water intake, purification and supply" [24]. The head of the unit's medical service must monitor the implementation of measures to prevent and eliminate pollution of surface and groundwater with substances harmful to health that are used for drinking and household needs [22]. Such a drinking water supply scheme provides higher water quality. However, it is not possible and economically feasible to implement everywhere, at least due to the uneven distribution of Ukraine's water resources across its territory and the difficulties of accessing them.

The main requirements for water supply in the field are determined by the order of the commander of the NGU dated 05.01.2016 No. 499 [25]. The organizational framework provides for the possibility of using any source of water available at the location. Certain priorities are defined. According to [25], in order to provide water for drinking, household and sanitary needs, the operating centralized water supply systems and artesian wells located nearby military camps or settlements are primarily used, and in their absence, wells, catchments and other sources. In the event that it is impossible to use the existing sources of water supply, the engineering service units, together with the medical service and the RCB protection service, conduct reconnaissance of water sources. The engineering service is responsible for extracting, purifying water, setting up water supply points using drilling rigs, water purification and desalination stations, equipping water collection points, providing military units and subdivisions with water extraction and purification equipment, as well as personnel tanks for its storage and transportation. Water is transported to the camp using special vehicles, tanks, reservoirs and other personnel vehicles. To carry drinking water supplies, personnel are issued individual flasks that are filled with boiled water or tea. Boiled water distribution points are set up to fill the flasks, which are equipped with containers with lids and water collection taps. When performing tasks in an epidemically dangerous area, Aquatabs tablets are used to disinfect individual water supplies in flasks [25].

In order to increase the efficiency of drinking water supply, optimize transport logistics, and simplify control over the quality of drinking water, a number of effective solutions have been adopted and implemented in the National Guard of Ukraine in recent years. Bottled drinking water has found wide use. The rapid development of natural water purification technologies, the availability of appropriate technological equipment, the availability of convenient containers for packaging, transportation, and storage of water, and the proper quality of bottled water have determined the feasibility of not only purchasing it from industrial manufacturers, but also independent (purely for own needs) production in the NGU. This has given a new impetus to the development of drinking water supply logistics.

According to experts, today about a third of the total annual demand of the NGU for bottled drinking water is met by its own production capabilities. The rest of the bottled water is purchased centrally. Currently, water filtration and bottling stations operate in 5 military units. The distribution of water filtration and bottling stations makes it possible to organize its supply to consumers on a territorial basis, namely within operational-territorial associations.

In the case of centralized procurement of bottled

drinking water, the subject of procurement "Drinking water" is divided into lots on a territorial basis. The customer determines the parts of the goods within the framework of a single procurement procedure for which tender offers are submitted, by the place of delivery. In the case of centralized procurement, water is supplied to military units by manufacturers (suppliers) independently, which is provided for in standard contracts. Transport and related costs are included in the price of bottled water. This approach meets the requirements for the logistical support of troops, namely the territorial principle of building the logistics infrastructure and maintaining a balance between the efficiency of logistics support and achieving maximum savings in public funds [21].

Water produced at the National Guard of Ukraine's own production facilities is delivered to military units by logistics units. Purified water is bottled in 6.0-liter PET plastic bottles, accounted for, and stored in a warehouse. Periodically (usually twice a week) in accordance with supply plans and transportation plans, water is released to military units and transported by regular motor vehicles to military unit warehouses.

The operation of water filtration and bottling stations in the military units of the NGU provides significant annual cost savings. Its estimate $(\hat{E}_a)$ can be obtained using the formula

$$\hat{E}_a = 12 \cdot V_\Sigma \cdot \left(\bar{P} - \left[d_p \cdot \bar{P} + d_i \cdot \bar{C}_p\right]\right) - C_{tr},$$

where 12 is the number of months in a year;

V_Σ is the monthly need for bottled drinking water, l;

$\bar{P}$ is the average price of water purchased centrally from producers (suppliers), UAH/l;

d_p is the share of the total demand for bottled water that falls on centralized purchasing;

d_i is the share of the total demand for bottled water accounted for by independent production;

$\bar{C}_p$ is the average cost of water produced independently, UAH/l;

C_{tr} is the costs for water delivery by the forces of logistics units of military units, UAH.

Given the current needs of the NGU for bottled drinking water, its share that is produced independently, and cost indicators, the estimated annual savings are over 20 million UAH. This estimate does not take into account the costs of water delivery by the logistics units of military units. Therefore, the real savings are somewhat lower.

A graphical interpretation of the process of generating savings is shown in Figure 1.

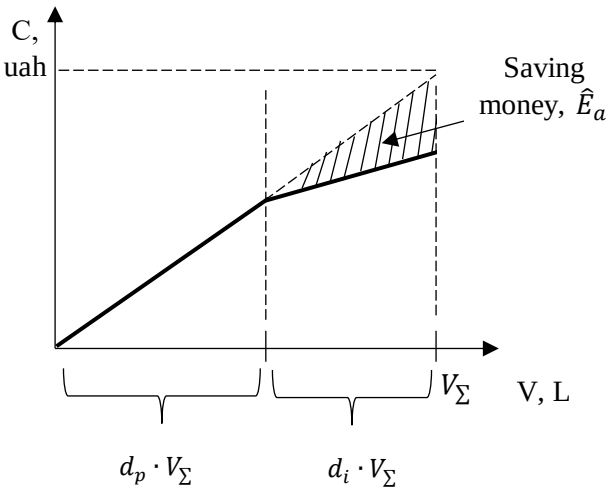

Figure 1 – Graphical interpretation of the process of generating cost savings

The provision of drinking water to NGU units performing tasks in combat zones (areas) is organized on the basis of general requirements for the logistical support of units and the principles of its organization [21, 26]. It is integrated into the food supply processes and is carried out in the context of decisions on combat operations and their logistical support made by commanders. The use of logistics units is carried out according to a single concept and plan.

Bottled drinking water supplies are subject to echeloning. Initially, water is accumulated in stationary warehouses of military units in volumes that meet the standards for maintaining stocks. From there, it is delivered to field warehouses (points), where its current stocks are stored. Their size depends on the conditions of the situation, the nature of the ongoing hostilities, transportation capabilities and other factors. Drinking water is subject to echeloning to the depth of the operational zone (district) and within the logistical support strips of logistics units. Water is stored in designated places (storage facilities, shelters, units, with servicemen) taking into account the real conditions of the situation.

On the routes of transporting drinking water from the points of permanent deployment of military units to the areas of task performance, peculiar hubs (intermediate junctions) can be created, where supplies of bottled drinking water are accumulated with its subsequent delivery to specific points in the areas of task performance as intended. Such hubs contribute to increasing the efficiency of transport logistics, the reliability of

storing bottled drinking water supplies, and therefore the reliability of providing units with drinking water.

Bottled drinking water is delivered to units from field warehouses (distribution points), where representatives of the units usually arrive by their own transport. The location of storage points and water distribution points, as well as the time of delivery, periodically change, which is related to ensuring the survivability of the logistics system, the secrecy of processes, and the reliability of supply.

The analysis shows that the existing logistics of drinking water supply of the NGU makes it possible to fully meet the needs of military units (subdivisions) in drinking, in particular bottled, water in various conditions of stay. It is based on scientifically sound principles and requirements for the logistical support of troops, and is carried out in strict accordance with the requirements of governing documents. The processes of formation, movement and use of material flows (drinking water) and the accompanying documentary and financial flows are organized rationally and allow for their effective management at all stages of activity.

At the same time, a number of problematic issues have now emerged. Some of them are at the stage of active resolution. Others require more detailed study, including relevant theoretical research, and their results are expected to influence the directions of development of the logistics of drinking water supply of the NGU in the coming years.

1. Work is underway to expand the dimensional (volumetric) range of containers used for bottling bottled water. As experience has shown, there is an urgent need to use smaller bottles for bottling drinking water, namely 1.5 l bottles, as well as so-called doypacks with a capacity of 300–350 ml, along with 6.0 l bottles. The need is mainly due to the difficulty of delivering drinking water in 6.0 l bottles to servicemen who are directly at combat positions. Reducing the capacity makes it possible to use aerial drones for water delivery, which often remain the only alternative, at least much safer than using other means (options) of transportation. In addition, a 1.5 l container contains a standardized amount of drinking water, which will have a positive impact on the processes of water accounting and consumption.

2. The use of PET containers for storing drinking water carries certain risks for consumers. Such containers are disposable. Even with slight heating, harmful chemicals are released that enter the water stored in them, and therefore the human body. With prolonged use of such water, there is a risk of poisoning by harmful impurities that accumulate in the human body and negatively affect the skin, kidneys, liver and other organs. Therefore, the urgent task is to switch to containers made of materials that are safer for human health.

3. Development of modern means of filtering and bottling water based on mobile vehicles, for example, on the basis of a car chassis or a car trailer, i.e. field technical means, with functions close to the functions of stationary stations. Currently, there is experience associated with the provision of water filtration stations by volunteers that operate from any water bodies. Their performance makes it possible to filter up to 1000 l/h of drinking water directly in places close to the contact line with the corresponding positive effects arising for the logistics of drinking water supply.

4. The experience of modern warfare shows the feasibility of using so-called hydrators as part of the combat equipment complex for carrying drinking water instead of individual flasks. They provide a more convenient placement of a supply of drinking water on oneself and allow a serviceman to drink water directly during movement or activity, without requiring a stop and searching for a flask (bottle) in a backpack.

5. The efficiency of obtaining drinking water using chemical agents (tablets, powders), which can be used once immediately before consumption. These agents are mainly of foreign origin and have a high price. It is advisable to develop and introduce domestic analogues.

6. Amendments to the guiding documents that relate, in particular, to the issues of providing military personnel of the National Guard with drinking water in field conditions, to take into account the experience of performing service-combat, combat and special tasks, as well as ensuring the vital activity of military personnel in the areas (places) of performing assigned tasks.

Conclusions

General problems of drinking water quality in Ukraine, problems of water extraction in the field, its delivery to units performing tasks in areas of combat operations, determine the need for further development of drinking water supply logistics.

Development directions are related to solving a number of issues of providing servicemen of the National Guard of Ukraine with drinking water, which have been actualized based on combat experience and the practice of independent production of bottled drinking water by filtration and bottling stations created in military units of the National Guard of Ukraine.

The directions of logistics development concern various aspects of drinking water supply: increasing our own capabilities for the production and bottling of drinking water, improving its quality, improving transport logistics, increasing the safety of containers used for bottling drinking water, updating drinking water storage facilities as part of the combat equipment complex, etc. These directions should be developed comprehensively, based on both practical experience (especially during martial law) and the results of theoretical research.

The key direction of further theoretical work is the development of recommendations and proposals for a comprehensive approach to assessing the level of safety and increasing the efficiency of drinking water supply in field conditions of units of the National Guard of Ukraine.

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ЛОГІСТИКА ПИТНОГО ВОДОПОСТАЧАННЯ ВІЙСЬКОВИХ ЧАСТИН І ПІДРОЗДІЛІВ НАЦІОНАЛЬНОЇ ГВАРДІЇ УКРАЇНИ: СТАН ТА НАПРЯМИ РОЗВИТКУ

Проведено аналіз логістики питного водопостачання військових частин і підрозділів Національної гвардії України. Питна вода є ресурсом, який суттєво впливає на боєздатність військ, а можливості щодо забезпечення їх якісною питною водою наразі значно ускладнюються, що обумовлено як загальним станом питного водопостачання в Україні, так і умовами сучасної високотехнологічної війни. Відповідно, логістика питного водопостачання має бути достатньо гнучкою та спроможною забезпечити потреби військ за будь-яких умов їх перебування та тактичної обстановки, що потребує її подальшого розвитку. У статті подано характеристику основних логістичних схем питного водопостачання, показано наявні проблеми та шляхи їх вирішення.

Показано, що з метою підвищення ефективності питного водопостачання у Національній гвардії України за останні роки прийнято та реалізовано низку важливих рішень. Зокрема, широке використання знайшла бутильована питна вода. При цьому стрімкий розвиток технологій очищення природної води, доступність відповідного технологічного обладнання та інші чинники обумовили доцільність не лише закупівлі бутильованої води у промислових виробників, а й самостійного її виробництва в Національній гвардії України. Таке виробництво забезпечує низку логістичних переваг та значний економічний ефект. Запровадження цього варіанта отримання питної води дало новий поштовх до розвитку логістики питного водопостачання.

Надано загальну характеристику питного водопостачання підрозділів, які виконують завдання у місцях (районах) ведення бойових дій.

У статті зазначено, що наявна логістика питного водопостачання Національної гвардії України дає змогу забезпечувати потреби військових частин (підрозділів) у питній, зокрема бутильованій, воді у різних умовах перебування у повному обсязі. Процеси формування, переміщення та використання матеріальних потоків (питної води) й супутніх їм документальних і фінансових потоків організовані раціонально та дають можливість здійснювати ефективне управління ними на всіх етапах діяльності. Водночас є проблемні питання, які вимагають більш детального вивчення та проведення відповідних теоретичних досліджень. Окреслено завдання, які потребують вирішення у контексті зазначених проблем.

Ключові слова: *вода, якість питної води, водопостачання, бутильована питна вода, логістика, польові умови, доставка води, ешелонування.*

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