On the role of protection of particularly important facilities in the context of special operations to localize stress zones

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Abstract. Within the framework of the study, the authors present approaches to defining the concept of a "particularly important object", and propose their own definition, including the establishment of an appropriate status by state bodies, provided that harm to such objects will entail negative consequences at the regional, national, and global levels. The negative consequences of special operations carried out in the USSR to intensify the extraction of minerals and changes in river flows using controlled atomic explosions, the locations of which should be attributed to particularly important facilities, have been revealed. The conclusion is made about the growing global environmental and food crisis, which negatively affects the standard of living of the world's population. The elements of the protection system for particularly important facilities and stress zones have been identified, considering modern challenges and threats.

1 Introduction

Environmental protection, maintenance of land fertility, as well as timely response to controlled and arbitrary transformations of nature affect the provision of environmental and food security as elements of state national security. At the same time, the use of tools for the protection of particularly important facilities and other security systems of stress zones guarantees an increase in the level of population protection from natural and man-made threats.

The huge resource potential of the state in general and the territory of the Perm Krai in particular determines the possibilities for conducting special operations in the form of controlled natural transformations to increase the efficiency of land and natural resources use. Nevertheless, at the same time, with the planned improvements, events repeatedly arise that pose threats to land pollution and crop failures, as well as the emergence of other factors affecting the food security of the territory [1].

An urgent issue in the economic development of the territory is the balance of the functioning of the extractive and processing industries, environmental protection, increasing land fertility and combating pollution, protection of especially important facilities, as well as localization of stress zones from possible negative consequences.

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2 Materials and Methods

A particularly important object is an object whose significance is determined in accordance with the established procedure by state and municipal bodies, to determine measures to protect the interests of the state and individuals from criminal encroachments, as well as to prevent damage that may be caused to nature and society [2].

Also, a particularly important object can be defined as an object having social, material, historical, scientific, artistic or cultural value of federal or regional significance in accordance with the normative legal acts of the Russian Federation and its subjects [3].

In accordance with the methodological recommendations approved by the State Department of Non-Departmental Protection of the Ministry of Internal Affairs of the Russian Federation, a particularly important object is understood to be a man-made, natural, natural-man-made object at risk of criminal threats of unacceptable damage to the object itself, nature and society, as well as subject to threats of emergency circumstances [4]. In addition, life support facilities for the population can be attributed to the number of particularly important objects [5].

In our opinion, a particularly important object is an object whose status must be determined by state authorities, while harming it will have negative consequences on a regional, national, and global scale.

Particularly important facilities are created to maintain the life support of the country's population, and may also arise as a result of unsuccessful experiments. For example, during the Soviet era, special operations were carried out in the form of tests to increase oil and gas production, which did not give a positive result and today such places are stress zones, because they pose a threat of the spread of polluting radioactive substances. In this regard, the role of protecting particularly important facilities is not only to ensure their safe use, but also to localize stress zones to offset possible negative consequences.

In the 60-70s of the last century, due to rising oil prices and increasing foreign exchange earnings, the leadership of the USSR decided to increase resource extraction [6]. For example, experiments were conducted in the Perm Region to intensify oil and gas production using controlled explosions of atomic charges. In 1969, near the city of Osa in the Perm region, the Griffin project was implemented, within the framework of which two underground nuclear explosions were produced. The power of each explosion was 7.6 kilotons, which is equivalent to the explosion in Hiroshima. At the same time, residents of the nearest settlements were not warned, as the secrecy regime was observed. People thought there was an earthquake. Windows shattered and stoves cracked in the houses. Subsequently, all bricks produced in the Perm region were sent to the Osinsky district to repair the damage [7].

Appropriate preparations were organized for the second explosion. In the nearest settlements, windows were sealed, people were taken out of buildings, children from schools and kindergartens. As a result, the goal was not achieved, because the increase in oil output was insignificant. Now radioactive waste is localized and stored under earthen dumps, fenced, and guarded around the clock. As a result of the explosions, the local population was forced to leave their personal subsidiary farms located in garden cooperatives [7].

In the mid-1960s, scientists revealed a strong shallowing of the Volga River and the Caspian Sea due to the supply of water to the irrigation systems of the republics of Central Asia, for example, Uzbekistan and Kazakhstan, where cotton production was located and virgin soil was rising. As a result, it was concluded that it was necessary to turn part of the flow of the northern rivers towards the south. In the Perm Krai, this channel was supposed to connect the Pechora and Kama rivers, the distance between which is 64 km. Since the territory between the rivers is taiga and it was not possible to carry out equipment for laying

the canal, it was decided to use the Peaceful Atom program, as a result of which the Taiga project was launched in the early 1970s [8].

In 1971, as part of a special operation, three atomic charges were detonated. As a result of the underground explosion, a 700 m long 380 m wide channel was formed. This channel was filled with water and a lake was formed, which is called Yadernoye. Subsequently, the implementation of such projects was abandoned due to the high cost of their implementation and the likelihood of environmental pollution [9].

This special operation has had a positive impact on the development of infrastructure in the north of the Perm region. Thus, the construction of closed settlements, local roads, power lines and power plants began. Both military and civilian units took part in the construction of settlements for the residence of nuclear industry specialists, for example, the Solikamsk Logging Plant [8].

It should be noted that even in the first time after the tests, researchers identified a number of negative consequences of the creation of artificial reservoirs, which include flooding of fertile lands and losses to livestock in the region [10].

Such experiments have an impact on both the environment and the economy. Environmental pollution, increased background radiation and elimination of consequences are accompanied by a reduction in resources and financial costs. Therefore, it is necessary to agree with the opinion that environmental safety is, first of all, part of the economic security of the state [11]. At the same time, as part of the protection of the population, contaminated areas should be localized, i.e. fenced off and secured to prevent unauthorized entry.

To date, our state has faced new challenges, which include sanctions pressure, the need for a special military operation, terrorist aggression, enemy sabotage and natural disasters: dam failures, floods, forest fires, etc.

In the context of a special military operation, the problems of ensuring national security and the search for solutions should consider the priority importance of environmental and food security issues of the DPR, LPR, Kherson and Zaporizhzhia regions. Efforts to solve these problems should be accumulated within the framework of developing a legal framework for ensuring the security of territories, considering an understanding of what is happening, an analysis of the opportunities that have appeared and the likely consequences [12].

The real threats to environmental and food security are the possible use of bacterial, chemical, and man-made weapons on the territory of the new subjects of the Russian Federation. The actions of the Ukrainian regime demonstrate that they are aimed at causing maximum damage to the lost territories. Therefore, their desire to create nuclear weapons is the trigger for a special military operation. At the same time, there is a possibility of blackmail from Ukraine, on the one hand through acts of terrorism against critical infrastructure facilities, primarily the Zaporizhzhia NPP, on the other hand, through provocations to create a "dirty bomb" [13].

The return of people to the liberated territories requires the State to pay increased attention to ensuring normal living conditions, including within the framework of restoring agriculture and food production. In addition, it is necessary to monitor the economic and physical accessibility of high-quality and safe food products, which constitute regional food security [14]. Ensuring the required conditions in the new territories is an important task for the State, which must protect and prevent manifestations of a criminal nature, for example, looting. Since any failures of the current government in the implementation of this task can be used as a tool to undermine confidence in it.

Due to the aggravation of destructive global trends, new waves of migration, conflicts and contradictions related to the food crisis seem inevitable [15]. The conflict that has flared up between the West and Russia on the territory of Ukraine, of course, it exacerbates the problems of ensuring food security not only in the region, but also around the world. This is

a kind of sacrifice in the West's struggle to preserve the old world order. Therefore, we can agree with the opinion that the recognition of a new multipolar world will reduce global tensions and accumulate forces in the fight against the effects of climate change, environmental pollution, food security, terrorism and poverty. At the same time, these destructive manifestations are accompanied by an increase in food and energy prices, a deterioration in living standards, which will provoke instability around the world [16].

At the same time, the reorientation of the domestic economy to eastern markets requires the transformation of intersectoral and interregional relations, changes in the structure of production, which will contribute to strengthening food security and ensuring access to new international food markets [17].

3 Results and Discussion

The role of protecting particularly important facilities during special operations in the form of controlled explosions was to ensure the localization of stress zones, protection of the territory, access control to restrict access to unauthorized persons, as well as to work with the population living in the vicinity of the sites of nuclear experiments and their preparation for nuclear tests. The objectives of these operations should include ensuring environmental and food security.

To date, the role of protecting particularly important facilities is to:

1) ensure their safe use;
2) prevent the threat of using assets of such objects as a tool to undermine confidence in the current government;
3) localize and level possible negative consequences;
4) protect from environmental pollution within the framework of ensuring environmental and food security.

In our opinion, the system of protection of especially important facilities should include elements of prevention and identification of vulnerabilities related to ensuring their protection, as well as localization of stress zones that have arisen. The elements of the protection system for particularly important objects are shown in Figure 1.

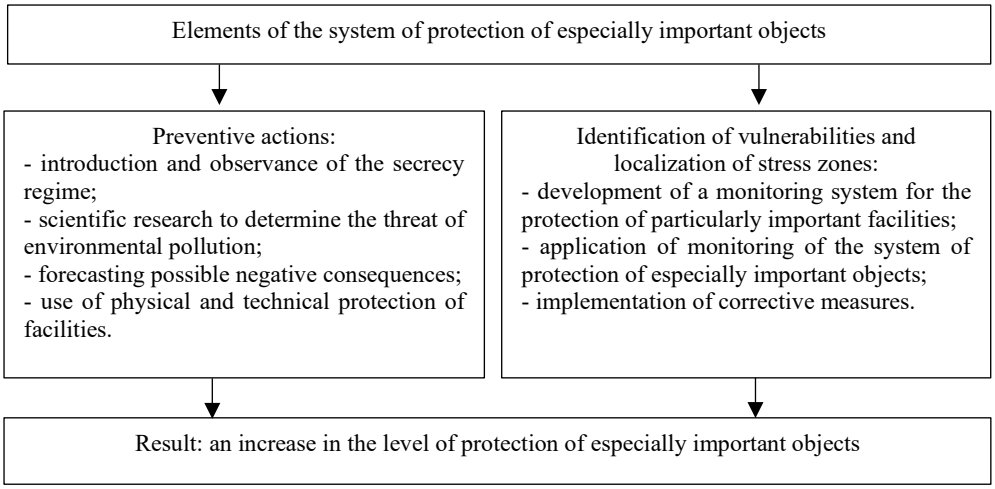

Fig. 1. Elements of the system of protection of especially important objects

As part of a special military operation, there are both threats and opportunities to ensure food security. On the one hand, there is a high probability of land pollution as a result of military operations using biological, chemical, and man-made weapons, on the other hand,

after the end of the conflict, it will be possible to expand food production on the fertile lands of new territories. At the same time, today, an important task is to ensure the conditions for the return of the population to the liberated territories and the organization of both everyday life and the production of safe and high-quality products.

The problem of ensuring food security is relevant along with sanctions pressure, rising food and energy prices, declining living standards and increasing terrorist aggression. This statement is true not only for our state, but also for the state of affairs around the world.

4 Conclusions

Among the particularly important objects that require protection are places where special operations are carried out in the form of experiments on the intensification of oil production and changes in river flows using controlled atomic explosions carried out in the 60s and 70s of the last century. Nuclear tests have caused harm in the field of environmental and food security. The requirements for the protection of particularly important facilities and the localization of stress zones are due to the threats of negative regional, national and global consequences, expressed in environmental pollution.

The action of the protection system against modern threats to environmental and food security is aimed at countering the use of bacterial, chemical and man-made weapons, as well as the possible use of assets of objects of special importance as elements of undermining confidence in the current government.

In the modern conditions of the conflict in Ukraine, the role of the system of protection of especially important facilities in ensuring environmental and food security is increasing, because in our opinion, it is the most effective means of combating enemy sabotage activities, possible manifestations of bioterrorism and encroachments on environmental protection in the form of chemical and other influences bearing devastating consequences. Thus, it can be concluded that ensuring environmental and food security allows for the implementation of measures to implement the country's national security policy in general.

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